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Surgery in Thyroid Ophthalmopathy

AL-HADDAD, CHERFAN, HADDAD, KHAWAM: Tenon's
Capsule Pseudo-Tendon Repair of a
Lost Medial Rectus Muscle

YANG: Extrusion of Non-Absorbable Suture from a
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- Basic Surgical Techniques – Do's and Don’ts
- Conjunctival incisions
- Limbal Rectus Muscle Recession
- Fomix Rectus Muscle Recession
- Rectus Muscle Tightening Procedures
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“...the belief that one’s view of reality is the only reality is the most dangerous of all delusions...”

-Watzlawick, 1976

**TABLE OF CONTENTS**

126 Advice and Information for Authors
126 Brian D. Stidham, M.D., Memorial Lectureship
70 Correspondence: Wright Grooved Hook.
   Kenneth W. Wright, M.D.
70 People & Places; News & Announcements
72 Editorial: Multifocal IOLs: A Euphoric Personal Report. Strabismus Surgery in Thyroid Ophthalmopathy; Management of the “Lost” Medial Rectus Muscle; Superior Oblique Tuck Complication

*** ORIGINAL SCIENTIFIC ARTICLES ***

86 Standard Strabismus Surgery in Thyroid Ophthalmopathy
   Seung-Hyun Kim, M.D., Leemor Rotberg, M.D. and Derek T. Sprunger, M.D.

93 Tenon’s Capsule Pseudo-Tendon Repair of a Lost Medial Rectus Muscle
   Christiane Al-Haddad, M.D., Carole Cherfan, M.D., Sandra Haddad, M.D. and Edward Khawam, M.D.

99 Extrusion of Non-Absorbable Suture from a Superior Oblique Tuck Without Loss of Surgical Effect.
   Michael B. Yang, M.D.

103 Strabology Report of the 35th Annual Meeting of the American Association for Pediatric Ophthalmology and Strabismus
   James L. Mims III, M.D.

117 Abstracts of the Current Literature
Meeting Announcements


Montreal, Quebec, Canada. October 16th, 2009. 34th Annual Pediatric Ophthalmology Day. Seating is limited. Contact: Luis Ospina, MD, Tel: 514-345-4715, Fax: 514-345-7706.

Vancouver, British Columbia, Canada. September 11 - September 12, 2009. 6th Biennial Pediatric Ophthalmology & Strabismus Conference. Sponsored by the UBC Department of Ophthalmology and Visual Science and the UBC Division of Continuing Professional Development, with an unrestricted educational grant from the Dr. John-Pratt-Johnson Endowment Fund. Contact: www.ubccpd.ca, Email: cme.cpd.info@ubc.ca, Fax: 604-875-5078.

Prague, Czech Republic. March 4-7, 2010. The World congress on Controversies in Ophthalmology (COPHY). Contact: Headquarters & Administration: Email: cophy@comtecmed.com, Fax: 972-3-5666177 (Israel).

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MORE INFORMATION TO FOLLOW
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EDITORIAL: Multifocal IOLs: A Euphoric Personal Report. Strabismus Surgery in Thyroid Ophthalmopathy, Management of the “Lost” Medical Rectus Muscle; Superior Oblique Tuck Complications

WOW! I CAN SEE AGAIN!!!! and WOW! I CAN SEE PERFECTLY and WOW! I CAN SEE PERFECTLY (yes 20/15- minus) ALL THE TIME AND EVERYWHERE- YES AS CLOSE AS NINE INCHES AND ALL THE WAY “FROM HERE TO ETERNITY” - no I mean INFINITY!

WOW! I CAN’T EVEN REMEMBER EVER SEEING THIS WELL BEFORE IN MY ENTIRE LIFE!

WOW! AND WITH NO GLASSES OR ANY OPTICAL CORRECTION. No contact lenses, no nothing. I’m a born again emmetrope.

JUST, that I am now surgically aphakic and with new IOLs! (IntraOcular Lenses) after surgical removal of my cataractous lenses. My cataract surgeon, Mike Taravella, at Rocky Mountain Lions Eye Institute in Denver, put a pair of the multifocal Alcon ACRYsofIQ ReSTOR lenses in, first a plus +4 in my left eye and then a plus +3 in my right eye, for maximum near vision, at my request.

Man, I love diffraction even though I really don’t understand how it works and I have been reading upon it, but the addition of that non geometric optical phenomenon is what makes a single IOL truly multifocal. I didn’t think that was ever possible but then I didn’t really understand diffraction at all. This seems to me to be the ultimate cure for presbyopia! I think I would have elected clear lensectomy and these lenses had these lenses been available as soon as I became significantly presbyopic and first gave up reading when I was about forty-three years old [Romano PE. Lack of Reading Interest Secondary to Presbyopia.. (Insights, RE Reinecke ed) Ophthalmic Surg 1988 19:672-673]

(What is next? ? Diffractive multifocal lenses for spectacles?)

But the biggest surprise to me when they took the dressing off the AM after my first surgery was how KODACHROME my sharp new vision was everywhere! (Yes, I know that Kodak has just discontinued producing Kodachrome film- such is the sad part of progress...) In fact driving home up Interstate 70 from Denver to our place on top of the Rockies, the scenery was fantastic, like I had never seen it before, even though we must have traveled that same road and scenery a hundred times since we moved here. And when we got home and I turned the TV on, I couldn’t believe the colors on the TV! I am common male color amblyopic, but a lot of that color amblyopia in recent years must have been my aging yellowing lenses, even before they became cataractous. I realize now! I see reds and greens so much better now, its as if my color vision is no longer defective- for sure not nearly as bad as I thought it had become!!! My appreciation and enjoyment of color TV is today increased like tenfold over what it was preop’. I bought a bigger flat screen for Christmas 18 months ago but had no idea until now, just how fantastic it was.

My road to cataract surgery was in itself educational and enlightening....and for an old former adult cataract surgeon (for me, limited to residency training but we did have to do a lot of them with out erisophakes! for Board qualifi-
cation) it was quite threatening and scary!

My serious medical eye history started six years ago when I noted in my far peripheral field of vision a rising skinny black snake, which broke up into finer streams which looked like RBCs! I called my fellow pediatric ophthalmologist and P&C of Ophthalmology at my local Denver University of Colorado teaching center, Rocky Mountain Lions Eye Institute (she built it!). and she said, get down here right away let my retina expert see you, Naresh Manadava.. So I did and he welded my retinal tear back together with 500 laser shots.

On a routine annual followup a year or two later, my retina surgeon noted I had early cataracts. My philosophy on that was, with all the yearly progress in that and many surgical fields, wait as long as possible for the best and latest treatment and results. I read (past tense read) the journals for cataract surgery progress regularly. However, the very real progress in the visual results of IOL cataract surgery was not readily apparent to me as nobody trumpets marginal improvements in results. As there have been no huge breakthroughs in that, rather just constantly incrementally improving vision. I didn’t really appreciate what was happening, and being accomplished!

Three years ago, at a meeting I mentioned my new visual symptoms, sparkles around auto headlights, to an old friend, Leonard Apt, and he instantly said- “it is your cataracts!” but my vision was still 20/20 BCV AOU. I didn’t know that was a symptom of cataracts but he did.

Two years ago en route to another meeting, my driver wife asked for help reading some road signs and I couldn’t! My VA was still OK but my contrast acuity was so bad I couldn’t read any highway signs unless the lighting was strong and direct. If the light was flat and or overcast or back lighted, no way! I had no idea I or anyone could be that visually incapacitated while I could still read 20/20 OU on an eye chart. I agreed to stop driving except where I knew the road well enough that I didn't have to read known road signs! WE NEED TO CHANGE DRIVER LICENSE VISION TESTING TO INCLUDE CONTRAST VISUAL ACUITY TOO!!! and for anything else where vision is critical to function- i.e., pilot’s licenses too! And I think that should also be part of a standard complete eye exam anywhere.... If you just test standardwise. which is in fact very high contrast acuity, you could totally miss a major low contrast vision problem!

Pretty soon, my cataracts got worse on their own and did affect my high contrast acuity as well. The left eye went first. But I was able to still do everything with a high contrast good right eye. I finally went to see a cataract surgeon but I was still seeing about 20/40 OS and 20/20 OD, so I said thanks but not yet. That was last September, nine months ago.

What I did learn at this point, was how bad vision could be while you can still read nominally “good” on an eye chart. 20/40 was pretty “OK” and will qualify you for a drivers license even if that is only your best eye. But I was shocked at how bad my vision really was at that point. Yes I could read the 20/40 line but it everything looked absolutely awful: blurry, shadowed, doubled and barely intelligible. And of course all the lines on the chart bigger than 20/40 were just that much more horrible. If that had been my better eye I would have signed on for surgery right there. In my youth, as a resident, I wondered how people could do cataract surgery on a 20/40 cataract when such vision was by law good enough to drive on. Now 40 years later, suffering myself, no problem!...understanding. I was also astounded that I had been that mis-understanding for a lifetime. I HAD HAD ZERO APPROPRIATE REAL EMPATHY FOR MY EYE PATIENTS - VISUALLY FOR MY ENTIRE CAREER as an eye doctor. And you know that the vision of amblyopes is decreased far more than high contrast acuity testing would indicate- it is more
like LOW contrast deficient acuity. A “COUPLE OF LINES” OF AMBLYOPIA IS A SERIOUS VISUAL DEFICIENCY IF YOU LOSE YOUR GOOD EYE AND SOMEDAY BECOME DEPENDENT ON THAT EYE SO DO TREAT ALL FUNCTIONAL AMBLYOPIAS AGGRESSIVELY TO FULLY NORMAL HIGH AND LOW CONTRAST VISION. ALL AMBLYOPES SHOULD BE TESTED REGULARLY ON BOTH CONTRASTS, NOT JUST HIGH CONTRAST VISION AND TREATMENT CONSIDERED SUCCESSFUL ONLY WHEN BOTH ARE NORMALIZED.

There was another local component to surgical delay at this point: our local weather-specifically seasonal monster snow storms in the fall and spring which regularly strand hundreds of motorists in Red Cross or local shelters along I-70. Between our home on the Rockies and Denver. I remembered well one April 17 about a decade back where I drove a good friend to the airport in Denver after a ski visit up here. The weather was fine and sunny going in but one of those spring snowstorms hit the hour or two I was gone. By the time I was approaching Eisenhower tunnel on the return trip, just twenty miles from home, there was all but instantaneous 6 inches of snow on the highway, cars and semis sidewalks all over the place, blocking the road. I threaded my way thru the mess, thankful for the traction control on my new car and made it home just before they closed the highway. Many of the people I slipped past in the last few miles spent that night in their cars on I-70, right where I had slipped past them. The next day when I looked at my car, there were brush marks on both front fenders from scraping around and between other cars. Every fall and spring they do have to close I-70 at least once or twice and strand motorists overnight on the highway. And that is no fun even if you carry extra clothes, food and water all the time just in case.

So after seeing my surgeon last September, with vision 20/50 OS and 20/20 OD, I figured I could make it to this summer’s driving season before needing cataract surgery, at least, in keeping with my intention to wait as long as possible.

But dang, after New Years, in the middle of our winter now, my cataracts in both eyes accelerated in their maturity and my disability. Soon I found my reading pile piling up seriously. I was able to read what I wanted or had to with magnification of various sorts, but that became too soon too hard, except for critical stuff.

A friend who had one of those giant TV low vision reading machines loaned it to me since his bilateral AMD made even that just too hard. But I soon agreed with him. Reading anything became a major, major chore, totally dissatisfying. That pile grew to two feet high before I got fixed. I also asked my wife Judy to keep an eye on me, because I no longer knew when I wasn’t seeing something well enough to protect myself or avoid another visual error. Specifically I stopped my daily walking into Dillon for our morning papers because I couldn’t see cars coming at me when I walked across Route 6 (to the paper box). Yes that is that same highway where, when you were at Keystone three years ago, there was a tunnel to walk under the highway to the conference center. That’s the only tunnel anywhere under route 6.

Back to Denver to schedule surgery. My BCVA was down to 20/100 and 20/50. But my contrast acuity must have been less than 20/200 OU by this time. And this last decrement in vision occurred in less than a month.

My surgeon said what do you want to be? Still mentally stuck on single vision IOLs I said I would like to be a three diopter myope for the rest of my life. Then he told me about the multifocals and his good experiences with them. I expressed a desire for maximum near vision such as a three diopter myope has with a near point of 13 cm and better with depth of field. No can do he said (I initially didn’t understand the diffraction and the geometric and not geometric optics of this IOL.)
You want the +4 multifocal he said, so I said OK.

I was scared to death of the topical anesthesia he proposed as routine now, but he agreed to let me have a little “twilight” sleep. I have had that a half dozen times in the last decade, and I liked it! I was also scared of the surgery as it was far more risky and hazardous the last time I did an adult cataract some 40 odd years ago! I did my last kiddy cataract about twenty years ago but had seen IOL cataract surgery only in movies or on TV tapes. A nasty mixture of ignorance and memories!

Postop’ (things went well) that +4 was great, but my new range of clearest near vision uncorrected was like 9 to 16 inches and beyond that a tad unclear from 16 to 30 or so inches somewhat remedied by a plus one lens (!). So for my second and right eye I asked my surgeon to put in the Plus +3 version of this IOL hoping it would, under binocular seeing, give me clearer near vision without correction for that 9 to 16 inch imperfect gap the +4 seemed to have. He agreed with some reservations. This time I was afraid that all the floaters I have in this eye from multiple rebleeds over the past five years from that bridge vessel over my old horseshoe tear might be even more apparent with good vision restored. But they are, in fact, less apparent to my happy surprise. It is as if they cannot compete visually with so much more good and clear visual information. Like an overcast sky, my cataract in retrospect must have made my floaters more rather than less visible to me. And so far the +4 and +3 corrections are working fine together as I had hoped they might.

The results, as I have noted at the start of this report, were unbelievably great and far more than I had hoped for or expected. The slow deterioration of my vision did not allow me to fully appreciate just how bad it had become. But the multifocal IOL is superb and my vision is not just restored, it is now turbocharged!

But my blizzard driving fears were certified. One of my followup visits was the morning of this past April 17 this year, (the tenth anniversary of that prior bad blizzard experience) and sure enough, it was snowing hard as we headed for Denver at 8 AM. When we got done at RMLEI at noon, we called CDOT for road information and sure enough I-70 was CLOSED just 20 minutes out of town at Floyd Hill due to heavy snow, multiple accidents and outright blockage of the highway. But we knew a back road around this, the original US route 6 through Clear Creek Canyon out of Golden, and we hopped on that, got around the blockage, and got home safely. Twenty minutes after we got home, they closed all of I-70 all the way from Denver to Vail, almost one hundred miles, and 30 miles beyond where we live! And it was still closed until 10AM the next morning. 500 people were marooned on I-70 for the night and were put up in emergency shelters along the route, at Idaho Springs and Georgetown and including even our own town!

But everyday when I look out our windows at the mountains, or take a drive somewhere, I remain astounded at what I can now see, with no correction whatsoever… mind boggling daily still two months after my last surgery

In THIS ISSUE

**Standard Strabismus Surgery in Thyroid Ophthalmopathy.** Kim S-H, Rotberg L, Sprunger DT. Binocul Vis Strabismus Q 2009; 24: 86-92

Senior author (DTS) writes: “It may seem like there is not a lot new in another thyroid eye muscle surgery manuscript. Please note, however, that this was all done with standard surgery (non-adjustable) and included several resection procedures which are rarely reported in existing literature”.


Authors Precis: A tongue of Tenon’s
capsule, attached at the original site of a lost extraocular rectus muscle in a young adult, works as a “pseudo-tendon” successfully restoring function in the direction of action of that muscle.

Senior author (EK) writes: “We’re trying in this paper to prove that, for an irretrievable lost muscle during strabismus surgery, a tailored piece of Tenon attached at the muscle insertion helps re-establish the ‘link’ between the recoiled muscle on one side, and the set of other insertions described by Hakim & Demer, on the other side. We believe that without such a ‘pseudo-tendon’, chances are that no ocular movements will take place. Backing that are our 3 cases of ‘slipped’ muscles, still attached to the sclera by the empty capsule, had no ocular movements. Moreover, several reported cases of lost muscles did not have any movement. Therefore, what Hakim & Demer said about full ocular movements following disinsertion of rectus muscles may not work in several cases. The use of a strip of Tenon-Acting as a ‘pseudo-tendon’ is then highly recommended.”

**Extrusion of Non-Absorbable Suture from a Superior Oblique Tuck Without Loss of Surgical Effect.** Yang MB. *Binocul Vis Strabismus Q* 2009; 24:99-102

Author Precis: Late, trauma-related extrusion of a non-absorbable suture used in a superior oblique tuck procedure for a child with superior oblique palsy did not result in a loss of surgical effect.

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**Strabology Report of the 35th Annual Meeting of the American Association for Pediatric Ophthalmology and Strabismus.** Mims III JL. *Binocul Vis Strabismus Q* 2009; 24: 103-116. Dr. Mims annual fantastic report and analysis of the meeting. He supplied all the photos as well! This is MUST reading for every pediatric ophthalmologist-strabologist and orthoptist or others interested in ocular motility and strabismus. Enjoy! And thanks again, Jim!

**LEFTOVER CURRENT EVENTS**

WORLDWIDE GREED and STUPIDITY, Version 2009. About two months ago, “NO Depression” was declared. In the last few weeks there is accumulating evidence that we are just about at the bottom of the recession. So our anger and outrage at the perpetrators is diminishing slightly. I have never been so badly screwed over in my entire life like this. And we ALL have been so HAD! We are not in depression but it is going to take us individually just as long as it did in the first half of the 20th century to dig our way out of this—that is how long it took to build what wealth I had before they took it almost all away. And no one is going to help me rebuild it even though someone sure as hell should. If the federal government can save the wealth and jobs of all those crooked bankers, they should make us “whole” too. Instead it looks as if we will wind up with the bill instead.

---

**DILBERT**

**I HEAR YOU HAVE AN MBA, JUST LIKE THE JERKS WHO RUINED THE ECONOMY.**

**I’M GOING TO PUNCH YOU SO HARD THAT IT HURTS EVERYONE WHO HAS THE SAME DEGREE.**

**WHAT WAS THAT HIDEOUS NOISE?**

**OW!!!**
We have to run this other Dilbert from the last issue- it is so apropos.

Hank Paulson is the greatest thief in the history of mankind, far, far worse than Bill Gates who held the crown before this. He convinced our government to give his banking buddies trillions of dollars to replace what they lost by their own greed and stupidity. Paulson made Madoff a penny ante thief at $50 billion, and the rest of us just poor, poor, poor for his and his buddies benefit. We haven't been this poor since we started out forty years ago And they have conned the entire world totally. At least this degree of legal criminality was not part of the depression of the 30's, was it Ben?

Greed is NOT GOOD. It is an addiction or addictive. Like illegal drugs it is never ever satisfied. It never quits. And therefore there is no end, no limit to it. Nor unlike illegal drug, is there any help or limiting treatment for it. Once I have my million dollar mansion, I can have another... and another... and another, right? It only ends with death of the afflicted apparently (or incarceration if they are stupid enough to get caught for something else. Greed is neither illegal or even immoral in our society.)

P.S. No room for my blog Hyde Park this issue, sorry. That's because we have added a second editorial on health care on the following pages... Planning on sending our recommendations to Obama....

First: There is no “Health Care Crisis” as Bill and Hillary MIS-named it almost two decades ago. Health care has become more expensive WITH GOVERNMENT SPONSORED INFLATION, AND as technology and ability to treat has increased and advanced over the years. Unlike computers, the cost doesn’t go down with the passing years and increased productivity, it goes up, rather like the cost of our automobiles, which are so much more complicated than they used to be but also so vastly superior to what they

used to be. Nobody seems to mind that or demand government intervention.

The problem is that human beings are born into this world without their OK. Nobody asked them beforehand if they would be interested in suffering all the difficulties associated with being in this world for a few years. And they don’t and never have liked finding out the cost of being here in this world.

They especially don’t like paying for
something that they don’t really want and didn’t bargain for, like sickness and disease. Obvious necessities like food clothing and shelter, they will pay for begrudgingly but medical care..... somehow they feel they shouldn’t have to pay for that- God maybe should pay for it since that is who put them here in this imperfect state. If God won’t pay for it, then maybe your employer should- or maybe the government!

Did you know or think that the US “medical industry” employs 1.4 million workers, only 10x the employees (before bankruptcy) of Chrysler and GM? (Most of whom vote democratic unfortunately for the medical industry)

The real problem is that our medical care is TOO good! People are living longer and longer and both the need for medical care and its costliness increase the older you are and especially after you stop working and retire at 65. That is the real reason why the portion of GDP spent on medical care is growing like an uncontrolled cancer. And why is it a problem? Because the government refuses to pay its “fair share”. For Medicare. (See law of unintended consequences of laws passed by congress, or current financial crisis resulting there from, the worst example) So what it doesn’t pay is not free. It cost somebody something for sure, and that unpaid govt share is pushed back into the system elsewhere resulting in outrageous bills for hospitalization and many drugs....

So how do we solve this problem- and it is a paramount issue right now- As Obama’s first edition of his health care “reform” (a truly nasty word suggesting if not accusatory of wrongdoing by “health care”!) bill is heading to congress even now as we write this.... YES the problem with health care is 100% the fault of our Congress and our government (just like the current financial crisis is). But we seem to be stuck with them.

But here are some articles and opinions we have collected recently on the subject. Our own recommendations follow them below....

**Health Care**

from *The Wall Street Journal* May 12, 2009 by Scott Gottlieb. **How Obama Care Will Affect Your Doctor.** “At the heart of President Barrack Obama’s healthcare plan is an insurance program funded by tax payers, administered by Washington, and open to everyone. Modeled on Medicare, this ‘public option’ will soon become the single dominant health plan, which is its political purpose. It will restructure the practice of medicine in the process. ... Like Medicare, the ‘public option’ will control spending by using its purchasing clout and political leverage to dictate low prices to doctors. ... As patients shift to a lower paying government plan, doctors’ incomes will decline by as much as 15% to 20% depending on their specialty. ... Physician income declines will be accompanied by regulations that will make practicing medicine more costly, creating a double whammy of lower revenue and higher practice costs, especially for primary care doctors who generally operate busy practices and work on thinner margins. For example, doctors will face expenses to deploy pricey electronic prescribing tools and computerized health records that are mandated under the Obama plan. For most doctors these capital costs won’t be fully covered by the subsidies provided by the plan.

“Government insurance programs also shift compliance costs directly onto doctors by encumbering them with rules requiring expensive staffing and documentation. It’s a way for government health programs like Medicare to control charges. The rules are backed up with
threats of arbitrary probes targeting documentation infractions. There will also be disproportionate fines, giving doctors and hospitals reason to overspend on the back offices to avoid reprisals. The 60% of doctors who are self-employed will be hardest hit. That includes specialists, such as dermatologists and surgeons, who see a lot of private patients. ...

“Doctors will consolidate into larger practices to spread overhead costs, and they’ll cram more patients into tight schedules to make up in volume what’s lost in margin. Visits will be shortened and new appointments harder to secure. It already takes on average 18 days to get an initial appointment with an internist, according to the American Medical Association, and as many as 30 days for specialists like obstetricians and neurologists.

“Right or wrong, more doctors will close their practices to new patients, especially patients carrying lower paying insurance such as Medicaid. Some doctors will opt out of the system entirely, going ‘cash only’. If too many doctors take this route the government could step in - as in Canada, for example - to effectively outlaw private-only medical practice. These changes are superimposed on a payment system where compensation often bears no connection to clinical outcomes. Medicare provides all the wrong incentives. Its charge-based system pays doctors more for delivering more care, meaning incomes rise as medical problems persist and decline when illness resolves.” (Dr. Gottlieb, a former official at the Centers for Medicare and Medicaid Services, is a fellow at the American Enterprise Institute and a practicing internist. He’s partner to a firm that invests in health care companies.)

from The Wall Street Journal June 19, 2009 “Opinion” by Betsy McCaughey. Dissecting the Kennedy Health Bill. “... Obama promised that under his health care proposal ‘you’ll be able to get the same kind of coverage that members of Congress give themselves’ ... It’s not true. ...

Members of Congress ‘enjoy that widest selection of health plans in the country’ according to the U.S. Office of Personnel Management. ... These choices would be nice for all of us, but they’re not in the offing. Instead, if you don’t enroll in a ‘qualified’ health plan and submit proof of enrollment to the federal government, you’ll be tracked down and fined (sections 3101 and 6055). NO, YOU WON’T BE ABLE TO KEEP YOUR INSURANCE IF YOU LIKE IT. ...

Only plans with managed care controls ... will meet the definition (sections 3101 and 2702). ... HMO style insurance ... with a primary care provider to manage your access, to costly services such as visits to specialists and diagnostic tests. Medical home providers in ‘qualified’ plans, states the Kennedy bill, will have a ‘payment structure’ based on ‘incentives’ rather than payments for each doctor visit or procedure (section 33101). ... ‘payment incentive called the ‘withhold’. When HMOs became dominant in the early 1990s, they would withhold 10% or more of physicians’ fees until the end of the year and give it back only to the physicians who met targets for limiting how many referrals to specialists or diagnostic tests their patients used. The targets were so stringent that, if they were exceeded, what a doctor prescribed for you came out of your doctor’s own pocket at the end of the year. This set up a conflict of interest between you and your doctor. Mr. Obama tried to put a positive spin on such cost controls. ... The President has promised that if you like your plan you can keep it. Mr. Kennedy’s bill says that too. It’s double talk, as the consequences of non-enrollment make clear. How big a fine will you face? The bill doesn’t specify or set a limit. It says the fine will be enough to ‘accomplish the goal of enhancing participation in qualifying coverage’ (section161). ...” (Ms. McCaughey is chairman of the Committee to Reduce Infection Deaths and a former lieutenant governor of New York state.)
2009, Potomac Watch by Kimberly A. Strassel. Mr. Burd Goes to Washington. “... busy Safeway CEO ... has charged into the political debate. ‘I’m here because health care simply isn’t a partisan issue’ ... There is what works, and what doesn’t. ‘I’m genuinely concerned someone might try to solve this by nationalizing health care, at the moment we at Safeway have proven that it is the market that reins in costs.’ ... He blew up the company’s existing health care structure and replaced it with one that embodies market principles - choice, responsibility, competition and price. ... The company today fully pays for an array of primary and preventive visits and tests. But beyond that, employees have skin in the game. The company deposits $1000 each year into a ‘health reimbursement account’ which workers can use to pay for care. The next $1000 in expenses is the employee’s responsibility. After that, employees pay 20% of coast up a $4000 maximum. Safeway workers these days treat that first $1000 carefully, since anything beyond it comes out of their pockets. ... Safeway is doing its part to improve price transparency, by having its care administrator, Cigna, analyze claims information. One discovery was that within 30 minutes of its California headquarters routine colonoscopy prices ranged from $700 to $7000. By the end of the year, employees will be able to go on a Web site, punch in a zip code, and get a list of providers and costs. The second part of Safeway’s plan was an embrace of the obvious: Healthy people cost less. Mr. Burd notes that 75% of health care costs are the result of four conditions - cardiovascular disease, cancer, diabetes and obesity. The majority of these are preventable. ... The result was Safeway’s ‘Healthy Measures’ program, which is voluntary. Employees are tested for smoking, weight, blood pressure and cholesterol. Every year they ‘pass’ results in a reduction in their premium, of as much as $1560 for a family, a year. Those who fail but prove progress can get refunds. ... Safeway’s smoking and obesity rates are roughly 70% the national average. ... When I ask Mr. Burd what he hopes to accomplish here, he is blunt that one goal is to prevent a ‘public option’ that would only ‘piggyback on the experience of Medicare.’ It’s a ‘Trojan Horse’ that will steer people to government and ultimately squeeze out innovative programs like his. ...” (Write to kim@wsh.com)

from The Wall Street Journal June20-21, 2009 by Abraham Verghese. The Myth of Prevention. A doctor explains why it doesn’t pay to stay well. Decoding what works, what falls short in Obama’s plans to reform health care. “... It is true that if the prevention strategies we are talking about are behavioral things - eat better, lose weight, exercise more, smoke less, wear a seat belt - then they cost very little and they do save money by keeping people healthy. But if your preventive strategy is medical, if it involves us, if it consists of screening, finding medical conditions early, shaking the bushes for high cholesterol, or abnormal EKGs, markers for prostate cancer such as PSA, then more often than not you don’t save anything and you might generate more medical costs. Prevention is a good thing to do, but why equate it with saving money when it won’t? Think about this: discovering high cholesterol in a person who is feeling well, is really just discovering a risk factor and not a disease; it predicts that you have a greater chance of having a heart attack than someone with a normal cholesterol. Now you can reduce the probability of a heart attack by swallowing a statin, and it will make good sense for you personally, especially if you have other risk facts (male sex, smoking etc.). But if you are treating a population, keep in mind that you may have to treat several hundred people to prevent one heart attack. Using a statin costs about $150,000 for every year of life it saves in men, and even more in women (since their heat attack risk is lower) - I don’t see the savings there. ...The bottom line is that our health care is costly because it is costly, not because we deliver more
care, better care of special care. ... Which brings me to my problem with the president’s plan: despite being an admirer, I just don’t see how the president can pull off the reform he has in mind without cost cutting. ... an electronic medical records (EMR) may or may not save money (it won’t be anywhere as much as is projected) but what it will do is ensure that we doctors, nurses, therapists, particularly in hospitals will be spending more and more time focused on the computer, communicating with each other, ordering and getting tests, buffing and caring for our virtual patient - the iPatient is my term for this phenomenon - while the patient in the bed wonders where everybody is. ... We may not like it, but the only way a government can control costs is by wielding great purchasing power to get concessions on the price of drugs, physician fees, and hospital services: the only way they can control administrative costs is by providing a simplified service, yes, the Medicare model (with a 3% overhead), and not allowing private insurance to cherry-pick patients (some of them operating with 30% overheads, the cost passed on to you). ...” (Abraham Verghese is Professor and Senior Associate Chair for the Theory and Practice of Medicine at Stanford University. He is the author of the “Cutting for Stone”)

Comment by your editor: This morning, Monday 22 June, Obama has unleashed his team’s latest hot idea for health care reform: “COMPARATIVE EFFECTIVENESS STUDIES”. He has made a big point to date that the results of medical care in the US tend to be the same across the entire country, but the cost vary greatly from one area to another, by as much as a third. So he has set as an objective, trying to eliminate that extra third of cost everywhere. But how to do that????

The answer to that is these “Comparative Effectiveness Research (CER) Studies”, to determine which procedures or treatments are the most effective medically, and then to deny or eliminate those that are ineffective (unlikely) (?or comparatively less effective = possible and more likely).

(Of course that is NOT AT ALL the reason for variations in health care costs around the country, since the results of care seem to be roughly the same everywhere! That has already been studied and demonstrated. It is however, a rationale, an excuse for the reformers to deny care.)

The immediate response of the medical sector is that this is effectively rationing of care, which of course is the bane of all the world’s socialized health care systems, along with DELAY the non identical twin of cost control in socialized systems.

This is the tip of the iceberg of “Cook-Booking” the practice of medicine. Just make a list of certain procedures or treatments which seem to be the most commonly utilized- that must be “best” or “comparatively effective” and pay or allow only those procedures and treatments = to be paid for or even permitted legally. This is the ultimate cost control device.

BUT:

“IS GOVERNMENT HEALTH CARE CONSTITUTIONAL?”

Wall Street journal, 22 June 2009 by David B. Rivkin Jr and Lee A, Casey

“The Right to Privacy conflicts with rationing and regulation

“...A strong case can be made for that proposition, based on the same “right to privacy” that underlies such landmark Supreme Court
decisions as *Roe v. Wade*”

“...The court’s underlying rationale was not abortion-specific. Rather the justices posited a constitutionally mandate zone of personal privacy that must remain free of government regulation, except in the most exceptional circumstances. As the court explained in *Planned Parenthood v. Casey* (1992), “these matters involving the most intimate and personal choices a person may make in a lifetime, choices central to personal dignity and autonomy, are central to the liberty protected by the Fourteen Amendment. At the heart of liberty is the right to define one’s own concept of existence, of meaning, of the universe and the mystery of human life....”

“... If the government cannot proscribe or -even “unduly burden”...how can it proscribe access to other medical procedures including transplants, corrective or restorative surgeries, chemotherapy treatments, or a myriad of other health services that individuals may need or desire?

“... proper care often depends upon an individual’s unique physical and even genetic history and characteristics. One size clearly does not fit all but that is the very essence of governmental regulation.

“...the courts, and not Congress, will have the last word.”

So basically we do not want government care. Medicare works but only barely with the grace of the medical profession, which should be refusing to see any medicare patients at all considering the unconscionably brutal attitude of our government to doctors As manifest by fee schedules, limitations. It is a state of semi-slavery. They have VIRTUALLY DESTROYED A PROFESSION THEREBY.

WHAT WE NEED TO DO TO REDUCE COSTS:

1. MAKE THE MEDICAL INSURANCE BUSINESS PUBLIC UTILITIES. LIMIT THEIR PROFITS SEVERELY JUST LIKE WE DO THE ELECTRIC POWER COMPANIES. Haven’t we seen enough extraordinary excess profits extracted from our patients and doctors too? Do we need more Richard Scruchy acts? And he is not alone at all..... If profits are limited it will reduce or eliminate the driving constant need of these insurance companies to make always bigger profits! They can drop their hostile combative attitude toward both patients and doctors.

2. CONSIDER DOING LIKewise TO ANY OTHER BUSINESSES RELATED TO MEDICAL CARE INCLUDING HOSPITALS, DRUG COMPANIES, MEDICAL BUSINESSES like MRI facilities

3. DO SOMETHING LIKE THAT TO LAWYERS WHO HANDLE MEDICAL MALPRACTICE. WE MUST REDUCE THAT COST LIKEWISE. If the government can limit the fees paid by Medicare to doctors and hospitals, it can do likewise for the lawyers. If government can immunize all government employees for liability for their errors and mistakes, regardless of how grievous they may be, we can do likewise for all aspects of medical care!

4. Finally

Biggest single dollar waste is aggressive terminal care. We doubt so many people would elect this treatment route if they had a chance to
choose. There is both a combination of poor advance planning by patients and need to promote terminal alternatives. Even Obama seems to be in agreement already with this:

From an Editorial in WSJ this Friday June 26: “Obama’s Health Future”

Obama recently said at his most recent TV health care forum this past week, after a woman told of her otherwise healthy 105 year old mother who needed a pacemaker but was told by her specialist “that she was too old for a pacemaker”, Obama replied:

“Look, the first thing for all of us to understand that we actually have some - some choices to make about how we want to deal with our own end-of-life care” Mr. Obama replied. After [then] discussing ways “we as a culture and as a society [can start] to make better decisions within our own families and for ourselves”, he continued that in general “at least we can let doctors know and your mom know that, you know what? Maybe this [medical or surgical treatment ] isn't going to help. Maybe you’re better off not having the surgery, but taking the painkiller.”

We think Obama was pretty brave going even that far as he did! In our society to even suggest that one would not in every case do absolutely any and everything possible to save life, regardless of any and everything else is still tantamount to heresy, is still murder by definition legally. The editorialist however, stated that this was a preview of the future and said “If or when the administration’s speculative cost-cutting measures under universal health care fail to produce savings, government will start explicitly limiting patient access to treatments and services regarded as too expensive.”

Freedom and choice, freedom to choose remain the rights no one wants to relinquish and especially in this situation. The alternative of hospice is available to many who might make such elections voluntarily. However, we still don’t have the right to end it all when we may want to. And that is the critical element. Why won’t our fellow humans allow us that right, at least to those who wish it? We do it for our dogs and other animals all the time, to keep them from suffering. But humans- they MUST suffer. They are not allowed what we proudly and mercifully bestow on our pets!

What is needed is to follow Jack Kervorkian (horrors!). We need to widen availability of assisted death by suicide as now permitted in Oregon, Switzerland, the Netherlands, and Belgium etc.

Government needs to recognize you can’t apply Henry Ford’s assembly line techniques to medicine in general. Humans are too variable and respond differently individually. You also can’t increase the impersonality- that is a serious problem already and a known source of malpractice suits.... in turn a major cost.

And another place where cost could be reduced....Finally, finally we can make the delivery of care more efficient and less costly by training and employing more ancillary personnel like physicians assistants and for us eye docs ophthalmic technicians and orthoptists.

I have received care from such personnel quite a bit in the recent past, dealing with my own health problems, and found the experience quite tolerable and even nicer and more enjoyable than dealing with MDs. Such personnel are never, it seems, as rushed and pressured as most doctors always are, and what most people want for medical care is not necessarily an MD but rather someone who has the time to answer your questions (as in recent TV advertisements by AHRQ.com, suggesting the questions you should, as a patient, be asking your doctor(s) regularly. See Hyde Park in next issue)

Unfortunately, all those lawyers in Washington D.C. are still jealous of MDs so I hold little hope for us and our profession ... -per
SAVE THE DATE
Thirteenth Annual
Gunter K. von Noorden
Visiting Professorship in Ophthalmology
October 1-2, 2009

Mohamad S. Jaafar, M.D., FACS, FAAP
Professor and Chief of Ophthalmology
Children’s National Medical Center
The George Washington University
Washington, D.C.

October 1, 2009
Gunter K. von Noorden Lecture:
“Superior Oblique Palsy - Where Do We Stand”

5 - 6 p.m.  Reception
Cullen Eye Institute, The Neurosensory Center
6501 Fannin, Room C 205

6 - 7 p.m.  Thirteenth Annual Gunter K. von Noorden Lecture
Cullen Eye Institute Auditorium, The Neurosensory Center
6501 Fannin, Room C 202

October 2, 2009
Grand Rounds and Lecture
8 a.m. - noon
Baylor Eye Clinic, 7200B Cambridge, Houston

MORE INFORMATION TO FOLLOW
For questions, please call 832-822-3237
Standard Strabismus Surgery in Thyroid Ophthalmopathy

SEUNG-HYUN KIM, M.D. 1,2, LEEMOR ROTBERG, M.D. 1 and DEREK T. SPRUNGER, M.D. 1

from the Departments of Ophthalmology (1) Indiana University School of Medicine, Department of Ophthalmology, Indianapolis, Indiana and (2) Korea University College of Medicine, Ansan, South Korea

ABSTRACT: Introduction: Techniques for the surgical treatment of thyroid related strabismus vary and include non-adjustable (standard), [postop’] adjustable suture, and a newer procedure aimed at correcting restriction rather than using dose/response tables. This study reports the results utilizing standard strabismus procedures for the treatment of thyroid ophthalmopathy.

Methods: Charts of 31 consecutive patients who underwent surgery in the past 5 years for restrictive strabismus secondary to thyroid ophthalmopathy were retrospectively reviewed. All surgery was performed by recession and reattachment of the muscle to the globe, allowing for no postoperative adjustment. Standard doses were used for all primary surgery and slightly modified in some cases of reoperation, but the general principal was from a standard published nomogram (1).

Results: All 31 patients had preoperative diplopia and restricted motility. 22 patients wore prisms prior to surgery. Of the 31 patients who underwent surgery 9 required a second operation. After reoperation 5 patients (16%) continued to have diplopia. However, 4 of these patients were able to achieve single binocular vision with a small amount of prism. Only 2 patients were unable to achieve single binocular vision with or without prism. 22 patients (71%) had full ocular motility after surgery. After one surgery, 25 of 31 patients (81%) were satisfied with the result of surgery. This increased to 29 patients (94%) after reoperation.

Conclusion: The results of this study indicated that strabismus surgery for restrictive thyroid ophthalmopathy using standard technique and table amounts of surgery can provide excellent results and patient satisfaction.

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This research was conducted at the Midwest Eye Institute, Indianapolis Indiana.

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INTRODUCTION

Thyroid ophthalmopathy (Graves’ disease) is an autoimmune inflammatory condition involving the orbit and surrounding tissue. Strabismus and limitation of ocular motility, most commonly restriction of one or both eyes, is a prominent feature and common sequela of Graves’ disease. The restriction arises from the inflammatory infiltration and subsequent fibrosis of the extraocular muscles. The inferior rectus muscle is most commonly affected, followed by medial, superior and lateral rectus muscles (2).

Once stability of the deviation has been established, recession of restricted muscles is typically performed with the goal of eliminating diplopia. Postoperative adjustable suture technique for this disorder has been advocated by some since the results of standard surgery have been thought to be unpredictable (3,4). However, postop’ adjustable suture technique can be difficult and/or uncomfortable for some patients. Also, there is some evidence that postop’ adjustable suture technique, especially thyroid ophthalmopathy involving the inferior rectus, may be associated with progressive overcorrection (5,6). Several reports have discussed the use of postop’ adjustable suture strabismus surgery in patients with thyroid ophthalmopathy, 82-87% of whom had elimination of diplopia, but average followup was unknown or less than six months (7-9). Leuder et al (10) reported only 47% of patients with thyroid ophthalmopathy had elimination of diplopia after postop’ adjustable suture strabismus surgery in primary and downgaze without using prism in followup of 41 months.

Recently, a newer procedure has been described that advocates correcting the restriction rather than using dose/response tables (11,12): however, one of these studies reported no difference in outcome between surgical correction of restrictedduction versus dose/response curves. (12).

This study reports the results from one clinical practice utilizing standard technique and tables by one surgeon (DTS) for treatment of restricted strabismus from thyroid ophthalmopathy.

METHODS

A retrospective review of patients with thyroid ophthalmopathy that were treated surgically for restrictive strabismus from 2000 to 2005 revealed 31 consecutive cases. All patients diagnosed with thyroid ophthalmopathy met the following criteria: restrictive strabismus and CT scans with thickened muscles sparing the tendon.

Historical data was taken from the charts including age and sex of the patients as well as surgical history (strabismus or orbital). Additional data included the presence of diplopia and the use of prism in the patients wearing spectacles. Preoperative assessments of extraocular motility and strabismus were performed on each patient. Preoperative and postoperative strabismus data was obtained using prism alternate cover testing at 20 foot and 13 inch targets.

All patients underwent strabismus surgery performed by re-attachment of the muscle to the globe allowing for no postoperative adjustment (standard technique). The surgical approach was as follows: a conjunctival limbal incision was performed, dissecting down to bare sclera. The surgical muscle was carefully isolated and cleaned of its connective attachments. A double armed 6-0 polyglactin suture (Vicryl; Ethicon, Inc., Somerville, NJ) was woven full thickness through the central part of the muscle with locking bites taken at either pole of the muscle. The muscle was disinserted from the globe (with either scissors or a 15 blade) and then reattached at the predetermined recessed measurement. Standard surgical dose table measurements were utilized for primary surgery. It was harder to quantitate surgical doses in some cases of re-operation, but
again the general principal was to use the published nomogram based upon the study of Thomas & Cruz (12). Also, two patients (SU, PH, underwent bilateral lateral rectus resection using

the nomogram for correction of residual esotropia (1). The conjunctiva was then closed using interrupted 8-0 polygalactin suture (Vicryl; Ethicon, Somerville, NJ). No postoperative suture

### Table 1 Subject-patient Data, Methods and Results:
for 22 patients who had a satisfactory result after only one strabismus surgery for thyroid ophthalmopathy

<table>
<thead>
<tr>
<th>Name</th>
<th>Age</th>
<th>Sex</th>
<th>Preoperative. alignment</th>
<th>Preop. prism</th>
<th>Surgery</th>
<th>Postoperative. alignment</th>
<th>Postop. prism for SBV</th>
<th>Satisfaction</th>
</tr>
</thead>
<tbody>
<tr>
<td>IH</td>
<td>78</td>
<td>F</td>
<td>25RHT</td>
<td>Y</td>
<td>LIR rec</td>
<td>Ortho</td>
<td>N</td>
<td>Y</td>
</tr>
<tr>
<td>LK</td>
<td>61</td>
<td>M</td>
<td>25RHT</td>
<td>Y</td>
<td>RSR rec</td>
<td>Ortho</td>
<td>N</td>
<td>Y</td>
</tr>
<tr>
<td>LA</td>
<td>50</td>
<td>F</td>
<td>14RHT,12ET</td>
<td>N</td>
<td>BIR rec</td>
<td>Ortho</td>
<td>N</td>
<td>Y</td>
</tr>
<tr>
<td>MP</td>
<td>67</td>
<td>F</td>
<td>30LHT,5ET</td>
<td>N</td>
<td>RIR rec</td>
<td>Ortho</td>
<td>N</td>
<td>Y</td>
</tr>
<tr>
<td>DA</td>
<td>39</td>
<td>F</td>
<td>12RHT</td>
<td>Y</td>
<td>LIR rec</td>
<td>Ortho</td>
<td>N</td>
<td>Y</td>
</tr>
<tr>
<td>GB</td>
<td>34</td>
<td>M</td>
<td>14ET,5RHT</td>
<td>Y</td>
<td>LMR rec</td>
<td>Ortho</td>
<td>N</td>
<td>Y</td>
</tr>
<tr>
<td>TD</td>
<td>43</td>
<td>F</td>
<td>35ET,4RHT</td>
<td>Y</td>
<td>LIR rec</td>
<td>BMR rec 6ET</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>MU</td>
<td>56</td>
<td>F</td>
<td>18ET,9LHT</td>
<td>N</td>
<td>LIR rec</td>
<td>BMR rec 2LHT</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>RR</td>
<td>55</td>
<td>M</td>
<td>2XT,8LHT</td>
<td>Y</td>
<td>RIR rec</td>
<td>RIR rec Ortho</td>
<td>N</td>
<td>Y</td>
</tr>
<tr>
<td>KW</td>
<td>56</td>
<td>M</td>
<td>35ET,5LHT</td>
<td>N</td>
<td>BMR rec</td>
<td>Ortho</td>
<td>N</td>
<td>Y</td>
</tr>
<tr>
<td>BT</td>
<td>40</td>
<td>M</td>
<td>14ET</td>
<td>Y</td>
<td>BIR rec</td>
<td>RMR rec Ortho</td>
<td>N</td>
<td>Y</td>
</tr>
<tr>
<td>JM</td>
<td>57</td>
<td>M</td>
<td>30ET</td>
<td>Y</td>
<td>BMR rec</td>
<td>12ET</td>
<td>N</td>
<td>Y</td>
</tr>
<tr>
<td>PJ</td>
<td>59</td>
<td>F</td>
<td>30ET,4RHT</td>
<td>Y</td>
<td>BIR rec</td>
<td>LMR rerec Ortho</td>
<td>N</td>
<td>HT= hypertropia, ET= esotropia, XT= exotropia</td>
</tr>
<tr>
<td>SM</td>
<td>66</td>
<td>F</td>
<td>8RHT</td>
<td>Y</td>
<td>RMR rec</td>
<td>RSR rec Ortho</td>
<td>N</td>
<td>Y=Yes, N=No</td>
</tr>
<tr>
<td>RK</td>
<td>37</td>
<td>M</td>
<td>6ET</td>
<td>Y</td>
<td>LMR rec</td>
<td>Ortho</td>
<td>N</td>
<td>N=No</td>
</tr>
<tr>
<td>BR</td>
<td>52</td>
<td>F</td>
<td>2ET</td>
<td>N</td>
<td>BIR rec</td>
<td>Ortho</td>
<td>N</td>
<td>IR= inferior rectus</td>
</tr>
<tr>
<td>BG</td>
<td>65</td>
<td>M</td>
<td>6LHT</td>
<td>Y</td>
<td>LSR rec</td>
<td>Ortho</td>
<td>N</td>
<td>MR= medial rectus</td>
</tr>
<tr>
<td>DF</td>
<td>67</td>
<td>M</td>
<td>14RHT</td>
<td>Y</td>
<td>LIR rec</td>
<td>Ortho</td>
<td>N</td>
<td>SR= superior rectus</td>
</tr>
<tr>
<td>BB</td>
<td>50</td>
<td>M</td>
<td>45ET,6RHT</td>
<td>N</td>
<td>BMR rerec 20ET,6RHT</td>
<td>Y</td>
<td>Rec= recession</td>
<td></td>
</tr>
<tr>
<td>JB</td>
<td>43</td>
<td>M</td>
<td>4XT,12LHT</td>
<td>Y</td>
<td>RIR rec</td>
<td>Ortho</td>
<td>N</td>
<td>Rerec= rerecession</td>
</tr>
<tr>
<td>GH</td>
<td>74</td>
<td>M</td>
<td>25RHT</td>
<td>N</td>
<td>LIR rec</td>
<td>2XT</td>
<td>N</td>
<td>Res= resection</td>
</tr>
<tr>
<td>KA</td>
<td>84</td>
<td>F</td>
<td>2XT,25RHT</td>
<td>N</td>
<td>LIR rec</td>
<td>2 RHT</td>
<td>N</td>
<td>Ortho= orthophoria</td>
</tr>
</tbody>
</table>

SBV=single binocular vision
Table 2 Subject-patient Data, Methods and Results:
for 9 patients who had a satisfactory result only after a reoperation strabismus surgery for thyroid ophthalmopathy

<table>
<thead>
<tr>
<th>Name</th>
<th>Age/Sex</th>
<th>Initial alignment</th>
<th>1st surgery</th>
<th>Final alignment</th>
<th>SBV(Prism)</th>
<th>Satisfaction</th>
</tr>
</thead>
<tbody>
<tr>
<td>EG</td>
<td>65/M</td>
<td>20ET 4LHT</td>
<td>BMR rec</td>
<td>6ET</td>
<td>Y(Y)</td>
<td>Y</td>
</tr>
<tr>
<td>RL</td>
<td>70/M</td>
<td>10LHT</td>
<td>BMR,RIR rec</td>
<td>RIR rec</td>
<td>6RHT</td>
<td>Y(Y)</td>
</tr>
<tr>
<td>LP</td>
<td>66/F</td>
<td>45LHT</td>
<td>LIR rec</td>
<td>RIR rec</td>
<td>25LHT</td>
<td>N(N)</td>
</tr>
<tr>
<td>SU</td>
<td>55/M</td>
<td>80ET 10LHT</td>
<td>LSR rec</td>
<td>BMR,BIR rec</td>
<td>16ET14LHT</td>
<td>Y(Y)</td>
</tr>
<tr>
<td>CH</td>
<td>84/M</td>
<td>25RHT</td>
<td>BLR rec,RIR rec</td>
<td>LIR rec</td>
<td>10XT,20RHT</td>
<td>N(N)</td>
</tr>
<tr>
<td>DD</td>
<td>43/M</td>
<td>16ET40RHT</td>
<td>RSR rec</td>
<td>LIR,LMR rec</td>
<td>Ortho</td>
<td>Y(N)</td>
</tr>
<tr>
<td>LG</td>
<td>53/M</td>
<td>12ET15LHT</td>
<td>RSR rec</td>
<td>BMR,BIR rec</td>
<td>Ortho</td>
<td>Y(N)</td>
</tr>
<tr>
<td>CT</td>
<td>51/F</td>
<td>60ET,8RHT</td>
<td>LMR rerec</td>
<td>BMR,BIR rec</td>
<td>6ET</td>
<td>Y(Y)</td>
</tr>
<tr>
<td>PH</td>
<td>36/F</td>
<td>35ET,4LHT</td>
<td>RMR rerec</td>
<td>BMR,BIR rec</td>
<td>Ortho</td>
<td>Y(N)</td>
</tr>
</tbody>
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adjustment of the alignment was performed.

Postoperative assessments of extraocular motility and strabismus were performed at 1 week, and at 3 and 6 months. Patients included in the review had at least 4 months of followup. Presence of diplopia as well as the ability to obtain single binocular vision with or without prisms was evaluated. Patient satisfaction was recorded as well.

RESULTS

Thirty-one patients were included in the study (see Table 1 prior page and Table 2, above) of which 18 (58%) were male and 13 (42%) were female. The mean age was 56 years (range: 34-84 years). Preoperatively, all of our patients complained of diplopia and 15 (48%) of these patients opted for preoperative prisms. Six patients (19%) had a history of previous strabismus surgery while 27 (87%) patients had a
history of orbital decompression. All patients had restrictive motility prior to surgery. The following surgeries were performed: 34 inferior rectus recessions, 27 medial rectus recessions, 6 superior recessions, and 4 lateral rectus resections. All surgeries were recessions with the exception of 2 patients who underwent bilateral lateral rectus resections (Table 2).

After one surgery the diplopia of 20 patients (65%) was eliminated and 11 continued to have diplopia in primary or reading position with or without prism (Table 1). Nine patients underwent a second surgery. After 6 months, 30 patients (97%) were able to achieve single binocular vision in the primary position with or without prism. 9 patients (29%) continued use of a small amount of prism postoperatively. However, 15 patients (48%) continued to have some restricted motility after surgery.

After one surgery, 25 (81%) patients were very satisfied with surgery. Four patients that required re-operation did express satisfaction even after the first surgery. After re-operation, all but 2 patients were satisfied with the results of surgery. These are the same patients that were unable to achieve single binocular vision (Table 2). No surgical complications were encountered. Late overcorrection (more than 6 months after original surgery) after inferior rectus muscle recession occurred in only 1 patient (RL, Table 2) and this resolved after re-operation.

**DISCUSSION**

The objective of surgical treatment of strabismus in adults includes the elimination of diplopia, re-establishment of binocular fusion, visual field enlargement, and resolution of abnormal head positioning (13). While strabismus surgery in adults has a high rate of successful realignment (14,15), those with thyroid ophthalmopathy have a higher frequency of reoperation and progressive overcorrection. Three case series reported re-operation rates of 27% to 50% in thyroid patients undergoing strabismus surgery (16-18). Postoperative adjustable suture strabismus surgery was introduced to improve the outcomes of unpredictable cases such as those with thyroid ophthalmopathy (19). While many feel that adjustable sutures allow for greater predictability (10,18) in one study the operative result 6 weeks after the surgery differed from that 24 hours after surgery in 28 (40%) of 70 patients (20). In another study, major and significant changes in ocular alignment occurred between the first day and 6 weeks after surgery (21).

The results suggest that there is insufficient evidence that patients benefit from the longer and uncomfortable procedure of postop’ adjustable surgery (22). After one surgery in this study, the diplopia of 20 patients (65%) was eliminated and 25 (81%) patients were very satisfied with their surgery. Also, after 6 months with one or two surgery 29 patients (94%) were able to achieve single binocular vision with or without prism. We believe the successful results within 6 months in this study are comparable to the previous results with postop’ adjustable surgery (82-87%)(7-9).

Some studies have found that postoperative overcorrection after inferior rectus recession is more frequent in those patients with thyroid ophthalmopathy undergoing postop’ adjustment (5,6). Sprunger & Helveston (5) reported 1 of 35 (3%) surgeries done with standard techniques had the progressive overcorrection while 13 of 32 (41%) done on a postop’ adjustable suture had the problem. This might be because the patients with thyroid ophthalmopathy often have a tight antagonist and it may slip in the initial phase of healing, so delayed fixation in postop’ adjustable suture may be prone to overcorrection (22).

In this study, mild overcorrection after inferior rectus recession was observed in only one patient and may have represented reactivation of the thyroid myopathy since the problem occurred more than 6 months after the original surgery. This may represent the important advantage of standard technique in thyroid ophthalmopathy.
In addition, oculocardiac reflex with bradycardia, discomfort and nausea have been reported during postop’ adjustment (23). Breakage of suture and slipping of the muscle have been observed after adjustment in thyroid ophthalmopathy (2). Single-stage adjustable strabismus surgery has also been advocated for the restrictive strabismus found in dysthyroid orbitopathy to eliminate the need for an extra visit and/or prolonged stay in the hospital (24). However, this procedure also does not overcome the ultimate disadvantage of postop’ adjustable surgery like significant change of ocular alignment between the first day and 6 weeks after surgery. No convincing data are available to show that strabismus surgery using adjustable sutures is superior to conventional methods even though there is no question at least decreasing a large overcorrection or undercorrection on the first postoperative day is reassuring both to the surgeon and the patient (25). The decision is often made on the surgeon’s preference.

Our study was not a comparison between the two options, but rather a presentation of the results of one clinical practice with standard techniques. In our study, strabismus surgery by standard techniques provided excellent postoperative results comparable to postoperative adjustable suture technique with a 94% satisfaction rate within postoperative 6 months. Also late overcorrection after inferior rectus recession occurred in only one of 31 patients (3%).

Typically, rectus muscle resections have been avoided in the treatment of thyroid ophthalmopathy. These muscles are already tight, and even a small resection may increase muscle stiffness. Metz (26) reported the occasional resection of the SR by 1-2 mm in patients with very large vertical deviations to avoid further recession of the ipsilateral IR. Bilateral lateral rectus resection using a nomogram was successful for correction of residual esotropia in our study. Our rationale was that the lateral rectus muscle is the least tight muscle in thyroid ophthalmopathy, and this is why the patients did not exhibit significant restriction postoperatively.

In conclusion, we feel that the results of our study indicate that strabismus surgery for restrictive thyroid ophthalmopathy using standard techniques and dosage tables can provide excellent results and also reduce the late overcorrection after inferior rectus recession.

REFERENCES
Case Report

Tenon’s Capsule Pseudo-Tendon Repair of a Lost Medial Rectus Muscle

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from the Department of Ophthalmology, American University of Beirut Medical Center, Beirut, Lebanon

ABSTRACT: Background and Purpose: The loss of an extraocular muscle is an infrequent but serious complication of strabismus surgery. The purpose is to show that a tailored tongue of Tenon’s capsule, 7.0 mm to 9.0 mm wide and 12.0 mm to 14.0 mm long, fashioned in the direction of a lost medial rectus muscle and attached at the site of its original insertion can restore full ocular movement in the direction of action of that muscle.

Case Report: This is a report of a patient who underwent re-shaping and attachment of Tenon’s capsule to the original insertion of the medial rectus muscle that ruptured during attempted medial rectus recession for longstanding esotropia with medial rectus restriction. The procedure was done immediately following the loss and failure to retrieve the lost muscle.

Results: Residual large angle esotropia and good adduction were obtained postoperatively despite a severed and consecutively lost medial rectus muscle.

Conclusion: A tongue of Tenon’s capsule, attached at the original site of a lost extraocular rectus muscle in a young adult, works as a “pseudo-tendon” successfully restoring function in the direction of action of that muscle.

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INTRODUCTION & BACKGROUND

The loss of a rectus muscle during a surgical procedure or at some stage of the postoperative period is one of the most serious complications of strabismus surgery (1). Cases whereby one of the muscles traumatically snapped while being held on the muscle hook have been reported. However, this is an infrequent complication and the exact frequency is not known (2,3). The medial rectus muscle is the most frequently lost or slipped muscle, probably due to the frequency of surgeries on that muscle compared to other rectus muscles. Moreover, in the sub-Tenon space, this muscle does not share intermuscular attachments to an oblique muscle, therefore, after disinsertion, it easily recoils through its normal penetration site in Tenon’s capsule. Retrieval of the superior rectus, inferior rectus and lateral rectus muscles is facilitated by their attachments to the corresponding oblique muscles (12).

The notion of extraocular muscle (EOM) pulleys was first explored by various investigators during the 19th century (4). Today’s concept of these pulleys was first proposed by Miller and colleagues in 1989 with the advent of magnetic resonance imaging (MRI) and three-dimensional image reconstruction to provide evidence for the pulley model (5,6). Investigation of orbital connective tissue as one of the determinants of ocular motility in cooperation with the EOM was recently demonstrated by Hakim et al (7). These structures were found to play an active role in the initiation of movement previously assumed to occur solely at the site of insertion of the EOM (7). Hakim et al demonstrated that in addition to the scleral insertion of the EOMs, there is another functionally important orbital insertion exerting additional active forces on the eye (7).

Demer et al proposed the active-pulley hypothesis (8). They divided the rectus EOM into two layers. The global layer inserts on the sclera rotating the globe while the orbital layer inserts on its pulley influencing the EOM’s rotational axis (8). Similarly, Hakim et al demonstrated that if the global layer was detached from its scleral attachment, the orbital portion may still exert a tractional force on the eye through the surrounding Tenon and corresponding pulleys (6,9).

Successful Tenon’s capsule pseudo-tendon repair of a traumatic inferior rectus muscle avulsion was reported in 1988 by Khawam et al. (10). The use of strips of Tenon’s capsule sutured to the site of a lost muscle was first described by Adler in 1958 (11). We similarly report a case where Tenon’s capsule was fashioned to replace a lost medial rectus muscle.

PURPOSE

The purpose is to show that a tailored tongue of Tenon’s capsule, 7.0 mm to 9.0 mm wide and 12.0 mm to 14.0 mm long, fashioned in the direction of a lost medial rectus muscle and attached at the site of its original insertion can restore full ocular movement in the direction of action of that muscle. Our purpose is also to hypothesize the mechanism of action of that procedure.

CASE REPORT

A 43 year old lady, presented because of progressive inward deviation of her right eye since the age of 10 years. On exam, vision was 20/22 OD and 20/18 OS with a correction of -2.75 +2.75x105 OD and -0.75 + 1.00x125 OS. Anterior segment exam was within normal limits in both eyes. On motility assessment, she had minus two limitation of abduction of her right eye and minus 1 limitation of abduction of her left eye. Alternate cover test showed 60 PD right esotropia (ET) with 7 PD left hypertropia (LHT) for both near and distance. This was the same in up gaze and down gaze, but the esotropia increased on right gaze to 70 ET.

Head tilt test revealed 60ET+9LHT on right head tilt and 60ET on left head tilt. The forced tilt difference was due to the “mild” left eye dissociated vertical deviation (DVD). Her cycloplegic refraction showed -2.00 +2.75 X 105 in the right eye, and -0.5 + 1.75 X 105 in the left, leading to a best corrected visual acuity of 20 / 18
bilateral. She was given her correction and re-examined in 1 month. The exam was essentially unchanged.

The working diagnosis was a longstanding esotropia with medial rectus restriction causing limitation of abduction and a mild left eye DVD. The plan was to recess the right medial rectus and resect the right lateral rectus.

Intraoperatively, on forced duction testing, the medial rectus muscles were very tight due to marked fibrosis in either eye. Eye muscle surgery was performed in the regular manner. After the nasal peritomy, the right medial rectus was isolated and held on two Jameson hooks. While attempting to engage the right medial rectus with a double armed 6-0 vicryl suture near its insertion, the muscle ruptured spontaneously at 7 mm from its insertion. We attempted to relocate the lost medial rectus but we failed to find any component of the proximal portion of the muscle in the sub-Tenon’s space.

As an alternative, a piece of the nasal Tenon’s capsule was dissected and fashioned in a manner to resemble the medial rectus muscle in width and in length. This was sutured to the MR original insertion using a double armed 6-0 vicryl suture. No further surgery was performed on the lateral rectus (see Figure 1).

**Figure 1** (C. Al-Haddad et al) Surgeon’s view, right eye, inverted; note eyebrow is below eye. Intraoperative photo of the surgically fashioned Tenon’s capsule pseudo tendon sutured to the medial rectus muscle’s original insertion (grey arrow, tip of which is at the anatomical superior pole of the insertion).
Figure 2 (C. Al-Haddad) Residual esotropia 6 weeks post-surgery with only mild adduction limitation of the right eye

Postoperatively, the patient had 30 prism diopters of right ET by alternate cover test at 1 day, 1 week, and 6 weeks post-surgery. Duction testing showed only -1 limitation of adduction and -1 to 2 limitation of abduction of the right eye (see Figure 2, above).

DISCUSSION

Management of a lost extraocular rectus muscle during surgery is usually transposition of the adjacent rectus muscles, if the lost rectus muscle is irretrievable. As long as the lost muscle retracts through its normal Tenon’s penetration site, it becomes irretrievable and cannot be located easily through prudent surgical exploration. Blind fishing can lacerate anterior Tenon’s beyond the 10.0mm surgical access zone as well as posterior Tenon’s and produce the so-called “adherence syndrome” due to extraconal and/or intraconal fat prolapse into the sub-Tenon space (12).

We believe restoration of adduction in our case was primarily due to the attached layer of Tenon’s fascia tailored to be shaped like a medial rectus muscle acting as a bridge between the lost muscle and the globe, or to some included but unrecognized muscle tissue or by Tenon’s attachments to the intermuscular membrane connecting all the rectus muscles.

Our results concur with those of Khawam and his colleagues (10) according to whom restoration of depression occurred following the insertion of a tailored strip of Tenon’s capsule at the site of the original insertion of a traumatically lost inferior rectus muscle. However, one should note that in their case recession of the antagonist superior rectus as well as inferior transposition of the lateral rectus were additionally performed. Therefore, the restoration of depression could not be attributed solely to the tailored Tenon’s fascia, while in our case no further surgery on any other muscle was performed.

Our results concur also with Hakim et al (7) who noticed that, following surgical disinsertion of extraocular rectus and oblique muscle global layers (that was assured in the past to be the sole site of force translation from muscle to eye), most disinserted muscles rotated the eye more than half-
way to an eccentrically placed target as well as generated noticeable oculorotatory force. They concluded that, in addition to the scleral insertion of EOM’s, there is another functionally important set of insertions that help the muscle to exert additional active forces on the eye. This set consists of pulleys inserting on the corresponding muscle, the surrounding connective tissues coupling the muscles to each other as well as to the orbit, and smooth muscles in Tenon’s fascia.

However, one should raise the question of why after disinsertion, loss or slippage of rectus muscles, some show normal ocular movements but other muscles show absent ocular movements. Three cases in the motility clinic of our eye department developed, in the year 2007-2008, slipped medial rectus muscles following surgical recession, with total absence of adduction (-4), confirmed by surgical exploration to be “slipped”, showing an empty capsule inserted at the intended scleral site of insertion and extending 7.0mm to 8.0mm posteriorly to the slipped end of the muscle/tendon (see Figure 3, below). Plager and co-workers reported 25 patients with lost extraocular rectus muscles. All showed a large angle consecutive tropia and a widened palpebral fissure worse in the field of the limited duction. Their estimation of duction ranges showed in all patients restricted movements in the field of action of the lost muscle, 13 patients had 15 degrees or less excursion and 6 patients had no movement (12).

Figure 3 (C. Al-Haddad et al) An example of a slipped extraocular muscle showing an empty, translucent muscle capsule. The chevron points mark the edges of the empty sheath.
Our hypothesis is that the tailored tongue of Tenon’s capsule inserted close to, or at, the site of the lost muscle, is necessary to restore ocular movement in the field of action of a lost extraocular rectus muscle because it establishes the links between the recoiled lost muscle on one side and the associated set of additional contracting active forces on the other side, namely the orbital layer of the lost muscle, the corresponding connective tissue, the corresponding and adjacent pulleys and Tenon’s smooth muscle fibers.

Of note is that our patient (43 years) as well as Hakim’s patients (20-45 years) belong to the same age group, that of young adults. The strength of Tenon’s fascia and the intermuscular connective tissue system at this age may partially account for the residual muscle action after disinsertion from the globe.

CONCLUSION

In extraocular muscle surgeries, one should handle tissues as gently as possible especially in at-risk patients where extraocular muscles are suspected to have developed increased fragility.

In case such an infrequent and serious complication does occur and if the muscle cannot be retrieved with gentle and appropriate search, blind fishing for the recoiled muscle should be avoided. This blind manoeuvre, when a lost muscle seems irretrievable, can lacerate anterior Tenon’s beyond the 10.0 mm surgical access zone as well as posterior Tenon’s and produce an “adherence syndrome” from the extraconal as well as the intraconal fat prolapse. One good option we recommend is to perform the relative minor procedure of Tenon’s capsule pseudo-tendon repair. In case of failure, the more radical muscle-transposition surgery can be performed later.

Our case report demonstrates that Tenon’s fascia can successfully act as a “pseudo-tendon” by re-establishing some of the different links that connect the rectus muscle to the globe, to its pulley and adjacent pulleys and to the orbital connective tissue.

REFERENCES


Extrusion of Non-Absorbable Suture from a Superior Oblique Tuck Without Loss of Surgical Effect

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ABSTRACT: Background: Superior oblique tuck is an effective procedure for the treatment of superior oblique palsy. There has been no report of the extrusion of the non-absorbable suture typically used in this procedure. We describe a case of late extrusion of the non-absorbable suture used in a superior oblique tuck.

Research Design: Case report

Case Report: A 4 year old boy underwent a successful left superior oblique tuck for a left superior oblique palsy. Eleven months after surgery, the non-absorbable suture used for the tuck extruded coincidentally with ocular trauma. The suture was slightly adherent to a suture granuloma in the supranasal quadrant of the left eye and removed without loss of surgical effect of the superior oblique tuck.

Conclusion: Late extrusion of a non-absorbable suture used in a superior oblique tuck may not result in loss of surgical effect. However, this finding does not imply the acceptability of using an absorbable, instead of a non-absorbable, suture in this procedure.

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INTRODUCTION

Superior oblique tuck is an effective procedure for the treatment of superior oblique palsy (1). To my knowledge, there has been no report of the extrusion of a non-absorbable suture typically used in this procedure. We describe a case in which the non-absorbable suture used in a superior oblique tuck in a child extruded 11 months after surgery coincidentally with ocular trauma.

CASE REPORT

A 4 year old boy presented with a history of the left eye intermittently drifting upward, a right head tilt, and a right face turn since infancy. On examination, the patient had an $18^\circ$ intermittent left hypertropia that worsened to $35^\circ$ both in right gaze and with left head tilt. The intermittent left hypertropia in right-and-up and right-and-down gaze positions was also $35^\circ$. In down gaze, it was $16^\circ$. Extraocular movements showed -2 superior oblique underaction and +2 inferior oblique overaction in the left eye. The patient exhibited a small right head tilt and right face turn that was consistent with a left superior oblique palsy.

The patient underwent a left inferior oblique recession of 14.0 mm using 6-0 polyglactin 910 (Vicryl, Ethicon, Inc, Somerville, NJ) and a left superior oblique tuck of 12.0 mm using a non-absorbable 6-0 polyester (Mersilene, Ethicon, Inc) suture with spatulated needles as previously described (2). A fornix incision was made in the superotemporal quadrant for isolation and tucking of the superior oblique. The superior oblique tendon was not sutured to the sclera, and the tucked portion of the muscle was allowed to retract underneath the superior rectus muscle. The conjunctival incision was closed with 6-0 fast absorbing plain gut suture. The patient’s postoperative course was noted for excellent alignment of the eyes in primary position, a surgically induced Brown syndrome of -4 elevation in adduction that decreased to -3 elevation by 2 months after surgery and thereafter remained stable. There was full correction of the abnormal preoperative head posture.

Eleven months after surgery, the patient was accidentally struck in the left eye with a mop handle and was noted by his mother to have discharge and a small white bump on the left eye. On examination, an extruded Mersilene suture in the superior nasal quadrant of the left eye with surrounding suture granuloma was found (Figure 1, below). Intraoperatively, the suture had slightly unraveled but maintained knots from the locking bites of the original procedure. The

Figure 1. (MB Yang) Traumatically extruded non-absorbable suture from a superior oblique tendon tuck with surrounding granuloma in the supranasal quadrant of the conjunctiva.
suture adhered to the wound, but neither the superior oblique nor superior rectus could be identified. With a gentle tug the suture separated from the wound. The wound was not explored and the surrounding granuloma (confirmed by pathology) was superficially trimmed in order to avoid inadvertently cutting or undoing the superior oblique tuck. A small amount of tissue that remained on the suture was diagnosed by pathology as fibrinopurulent exudate. Postoperatively, the patient maintained excellent correction of his superior oblique palsy with normal binocular alignment in primary position, a surgically induced Brown syndrome in adduction, and a normal head posture for 7 months as of this report (Figure 2). The residual suture granuloma resolved after treatment with tobramycin-dexamethasone ointment.

**DISCUSSION**

Superior oblique tucks are generally performed with a non-absorbable suture material presumably to reduce the risk of postoperative slippage and reversal of the tucked tendon (2-4). To my knowledge, no comparison of the effect of superior oblique tucks using absorbable versus non-absorbable sutures has been reported, and the complication of suture extrusion or migration after a superior oblique tuck has not previously been described.

In this patient, the tucked portion of the superior oblique probably shifted under the superior rectus muscle to the superior nasal quadrant before extruding through the Tenon capsule and conjunctiva. Presumably, the suture also cheese-wired through the tucked superior oblique tendon. The extrusion may have been associated with trauma, but this could be coincidental. The superior oblique tuck remained effective after extrusion of suture which suggests that the tendon remained tucked and/or adherent to sclera. However, the excellent outcome in this patient despite the complication does not necessarily mean that absorbable sutures can be substituted for non-absorbable sutures in superior oblique tucks. This case was one of late suture extrusion, and the extra time for healing allowed by tucking with a non-absorbable suture may be needed for adequate scar formation that prevents reversal of the tuck. Removal of the extruded suture without disturbing the superior oblique may allow the tuck to remain effective without need for additional intervention.

(Continued, next page)
CONCLUSION

Late extrusion of the non-absorbable suture used in a superior oblique tuck may not result in a loss of the procedure’s surgical effect. However, the acceptability of using an absorbable instead of non-absorbable suture in a superior oblique tuck can not be validly inferred from this case report.

LITERATURE SEARCH

A search of the literature from 1950 to present was performed using MEDLINE with the terms strabismus OR eye OR superior oblique AND suture AND migration OR extrusion.

REFERENCES

The Costenbader Music Box

Thirty-two years ago, in April of 1977, the Third Annual Meeting of the new American Association for Pediatric Ophthalmology and Strabismus was held at the Holiday Inn Union Square, San Francisco. I had the privilege of being the first Fellow allowed to read a paper at an AAPOS meeting. The paper was on a new
saccadic velocity recorder I had devised with an engineer, with preliminary results for paretic strabismus and Duane’s Retraction Syndrome. The machine looked like a large EKG machine, with a six-inch strip recorder on one side. (The original prototype was purchased by Wills Eye Hospital, and eventually Robert Reinecke MD used it in his extensive researches in nystagmus. I had met the engineer, who worked for Tracoustics®, a company that made nystagmus caloric testing machines, at the last joint national meeting of the Ophthalmologists and the Otolaryngologists that previous Fall in 1976.)

After giving my paper to an audience of no more than 250 Pediatric Ophthalmologists, I went on a quest to find Richter’s Music Box Shop in Ghirardelli Square. Richter’s was supposedly the only source in the United States for a small German music box shaped like a little house with a loose-jointed clown on the front of it that danced to the Can-Can song from *Follies Bergére*. Frank Costenbader MD, the first Pediatric Ophthalmologist, who decided in 1943 to restrict his practice to children and whose first partner was Marshall M. Parks MD, had discovered that the music box was even better than his photo of an airplane to get the children’s attention.

For 31 years I had used that music box for the testing of ductions and versions and it was beginning to be a bit out of tune. I checked into the Hyatt Regency at 5 Embarcadero Center on Thursday, the day before the meeting was to start, and resolved to have a San Francisco experience after grabbing a bite of Boudin sourdough at the airport. Hats off to the Program Committee for choosing the Hyatt, an absolute hub of public transportation, including BART, Muni buses, modern electric street cars on tires, antique electric street cars (trolleys) on rails (the F line), and cable cars. I took the California cable car to Powell, and found that most of the passengers were commuters rather than tourists.

I transferred to the Powell-Mason Cable Car, and went down Nob Hill a few blocks to Union Square. After enjoying 18 mini Swedish pancakes at Sears Fine Food (established 1938),...
a taste that lingers in my dreams even though the last time I ate there was 9 years ago, I sat for a while in Union Square, enjoying the obscenely beautiful weather. Then I found the building that was previously the Holiday Inn Union Square has been transformed into a Marriott and painted a lighter color, but it was still enough to evoke memories of that 1977 AAPOS meeting. (Across the street is the old Sir Francis Drake with a bar at the top with an incredible view of the night lights of San Francisco. In 1983 I had the privilege of sitting next to Frankie Stegall CO looking out on those lights as she divulged her personal dose-response numbers for infantile esotropia.) Then I took the cable car back up Nob Hill and down to Fisherman’s wharf.

Disembarking at the end of the (less crowded) Powell-Mason line, I began walking the six blocks to Ghirardelli Square, the last 4 going East on Beech Street. On a stylish brick building housing a contemporary sculptural art gallery and an Irish bar on the first floor, I suddenly noticed a modest metal embossed sign that read “American Academy of Ophthalmology.” I had stumbled upon the national headquarters of the AAO! (Remember? 655 Beech Street where you send your dues?) I had donated an ancient cast iron Amblyoscope to the Museum two years ago, complete with glass stereopticon slides that dated from the early 20th century. (The Major Amblyoscope was replaced in the orthoptic armamentarium by the Synoptophore about 40 years ago.) A gracious lady, Allison Neves, gave me a tour of the museum, even though I had no appointment. The nice lady who runs the museum, Jenny E. Benjamin MA wasn’t available at that moment. (See illustrations.)

Next stop, Ghirardelli Square. Richter’s Music Box Shop was going out of business in 3 days! Everything was 50% off! (The tourist shopping mecca moved from Ghirardelli to Pier 39 years ago, and anyone wanting a music box would now buy it from The San Francisco Music Box Company®.) Still, Richter’s did have one music box left with a loosely jointed dancing clown who dances to the Can-Can song. Of course, it wasn’t made of wood in Germany; it was made in China of cardboard covered...
with colored printed paper, but it will work for the purpose, and the shop person carefully packed it for the trip home. I had had my San Francisco experience.

(For more, please see Epilogue, below.)

The proper meeting report follows overleaf >>>>>

**Pi·er·rot** (pēˈə rōˈ; Fr. pye rōˈ), n., pl. -rots (-rōzˈ; Fr. -rōzˈ). 1. a male character in certain French pantomime, having a whitened face and wearing a loose, white, fancy costume. 2. (L.c.) an actor, masquerader, or buffoon so made up. [1735–45; < F, dim. of Pierre Peter]

**Pi·er·rot Lu·naire** (pēˈə rōˈ lō nərˈ; Fr. pye rō lyˈ nərˈ), a cycle of 21 songs (1912) for voice and instruments, by Arnold Schönberg, written in Sprechgesang style and set to poems of Albert Giraud in German translation.
The AAPOS Meeting at the HYATT REGENCY

New Officers

The new President of AAPOS, with her term officially starting July 1, 2009, will be C. Gail Summers MD, taking over from the current President, Bradley C. Black MD. The present Vice-President Elect, David A. Plager MD, will move up to Vice-President, and the new Vice-President Elect will be Steve E. Rubin MD, who did a great job as Treasurer several years ago. (Note: We should be especially grateful for the success of Dr. Plager as previous head of the Corporate Relations Committee in increasing corporate sponsorships and exhibitors substantially! Christie Morse MD continues his work energetically. We could have used more reminders to visit the exhibits this year; they were in a back room that I did not find until the last hour of the exhibits.) Constance “Connie” E. West MD continues as Treasurer. (With David G. Hunter MD, she is the author of the optics cram book used by many new ophthalmologists sitting for the boards, Last Minute Optics.)

Costenbader Lecture

The Costenbader lecture, “When and how to strengthen the superior oblique muscle” was given by one of my favorite colleagues, Richard A. Saunders MD of Charleston SC. After briefly describing the history of Superior Oblique (SO) surgery, Saunders pointed out that many strabismus surgeons never do it for fear of iatrogenic Brown’s syndrome. Although the post-tuck Brown’s is supposed to get better with time, if it hasn’t improved by one year post-op, it won’t ever improve. [a long wait for diplopia to resolve!] The correct number of mm to tuck in any individual patient with SO Palsy (SOP) does not correlate with pre-op clinical measurements; the amount of tuck must be determined by intraoperative observations.

Early in his career (about the time that he spent a few days in San Antonio learning how to measure saccadic velocities – my staff was snowed; he was the quintessential Southern Gentleman) Saunders presented a paper at the AAO and subsequently published a way to know whether you had tucked just the right amount. He proposed a gentle forcedduction test in which the eye is brought upward and inward. He said that the surgeon should just begin to feel resistance at the point that the inferolateral limbus crossed an imaginary dotted line connecting the medial and the lateral canthi. I have used his original diagram of the Saunders Post-Tuck Forced Duction Test (SPTFDT) in many lectures on the surgical treatment of SOP, even though I rarely perform a tuck. Saunders emphasized that the amount of tuck is just right if you just begin to feel the tightness as the inferolateral limbus crosses the dotted line connecting the medial and lateral canthi. He also pointed out that comparison of the tightness of the two sides is not helpful, because you have to make the paretic side tighter than the normal [not to mention that the patient may have an occult bilateral SOP]. (Also, later in the “Difficult Problems – Strabismus” work-
shop, Plager asserted that the two sides should match. Context is important here; Saunders would make the tuck a bit tighter than Plager because Saunders generally does not do a simultaneous IO recession, but Plager usually does a simultaneous IO recession in similar cases calling for SO strengthening.)

Saunders uses a classic Bishop Tendon Tucker, and he showed surgical movies illustrating the technique. He also presented 10 years of data regarding how many mm he has tucked in 15 cases of acquired/uncertain SOP compared to 15 other cases of congenital SOP. For the acquired/uncertain it was 7.8 ± 2.34 mm and for the congenital it was 11.3 ± 2.37 mm, with this difference significant at p = 0.002. To determine which category the patient belonged in, he used classic criteria such as the much larger fusional amplitudes seen in the congenital (thank you J. Lawton Smith MD) and the facial hypoplasia first reported in series by his partner a MUSC’s Storm Eye Institute, Ed Wilson MD. He then opined that the cause of this difference was almost always an abnormally long muscle body of the congenitally paretic Superior Oblique (expansure of the SO muscle body) rather than a primary abnormality of the “floppy” SO tendon.

Dr. Saunders went on to present data using a new instrument he had collaborated with Bausch & Lomb (formerly Storz) to create for the purpose of making tucks more quantitatively precise. This new Saunders tucker has a strain gauge built into the handle. In a pilot study of 10 patients, he described length-tension curves for the Superior Oblique. In the future the classic SPTFDT will be supplemented by this new capacity to measure the tightness of the tendon. (He also showed a loop surgical technique that enables him to loosen the tuck very slightly, a technique that does not require him to take the tuck down entirely if the first one is too tight by the SPTFDT.)

Sadly, in an otherwise great presentation, Saunders glossed over the differences between the Guyton test and the Plager test. (He knows the difference, but it took subsequent movies by David A. Plager MD in the “Difficult Problems – Strabismus” Workshop near the end of the meeting to make this clear to the neophytes.) It is best to have some one show you how to perform a properly executed Guyton test in which the retrodisplaced globe is “flipped” over the taut IO or the taut SO tendon using forceps on the scleral side of the limbus at the 9 o’clock position for the left eye and at the 3
o’clock position for the right eye. The best textbook description is in the Ken Wright atlas. (David Hunter MD likes to put a second forceps on the opposite scleral side of the limbus, but I like the original technique better.) The Guyton test is mainly useful to determine whether you have completely disinserted the IO for recessions or completely tenotomized the SO. It will also give you advance warning in the rare case with an absent SO tendon.

In marked contrast, the Plager test (best described in the David Plager MD chapter on SOP and SO myokymia in the Rosenbaum-Santiago textbook) involves using a pair of forceps placed on the scleral side of the limbus one at the 1:30 o’clock and the other at the 7:30 o’clock position for the left eye and one at the 4:30 o’clock position and the other at the 10:30 o’clock position for the right eye. In the Plager test, the eye is drawn up and in to determine whether the inferolateral edge of the limbus can be drawn further up and in than the edge of the upper lid speculum. The Plager test is mainly useful for determining whether you can tuck or Harada-Ito the SO without producing a Brown’s. (See: Mims III JL. The triple forced duction test(s) for the diagnosis and treatment of superior oblique palsy - with an updated flow chart for unilateral superior oblique palsy. Binocular Vision & Strabismus Quarterly 2003;18:15-24 and Mims III JL. Correction/Revision Re: Scientific Essay: Triple forced duction test for the treatment of superior oblique palsy... Binocular Vision & Strabismus Quarterly 2003;18:136-137.

First Prizes: Pearls that Will Impact My Practice

Pearls are where you find them, usually unexpectedly in the most unlikely of oysters. Jonathan M. Holmes MD was chairing the PEDIG meeting (impressive for the repeated straw polls of the attendees in determining what would work in future studies), when he mentioned that many colleagues had indicated a misunderstanding of the PEDIG studies in regard to how to proceed when the child’s amblyopia does not respond to 2 hours daily of patching with near work, such as video games, arts & crafts, doing homework while patching, etc. The PEDIG studies indicate that one should not give up at this point, but should go to 6 hours daily with near work. [This is what I had been doing, but I did not understand that the PEDIG studies provided some justification for this.]

An even less likely oyster: In the airport waiting to board, I noticed a 2-year-old child playing with a videogame. His mom said it was a V-Tech “Pocket” from Wall Mart. It appears that at least one two-year-old could patch with videogame “near work” as recommended by PEDIG.

A much more expected source of pearls was the “Surgical Secrets” workshop produced by David Coats MD. Among the dozens of pearls, Burton Kushner MD presented data to justify the use of loose prisms in predicting post-op diplopia in adults with esotropia or longstanding consecutive exotropia. If they report diplopia with the loose prisms, he goes to a Fresnel prism. If they have persistent diplopia with the Fresnel, he warms them that there is a small chance (1/10 or less) that they will have intractable diplopia after their eyes are straight.

Parks Bronze Medal

Not only did Alan Scott MD win the Parks Bronze Medal at this meeting, he also had the most interesting presentation initially rejected by the Program Committee. He presented cases for whom he had used Botulinum to relax the contracture of the antagonist and Bupivacaine permanently to increase the pulling force of the agonist, a sort of recess-resect approach to injected medication as a replacement for strabismus surgery. He managed to sneak presentations of these cases (complete with an amusing etching of a gentlemen garbed in 19th century clothing tossing a paper into a fire in a 19th century fireplace, a visual representation of the Program Committee) in the workshop produced by Keith McNeer MD on "The Comparison of Botox® versus Surgery in the Management of Infantile Esotropia." (See more of this below, under Esotropia.)
George Beauchamp MD and The Foundation of the American Association for Pediatric Ophthalmology and Strabismus Give AAPOS Another Gift.

Merrie Spaeth is the granddaughter of Edmond B. Spaeth MD, a colorful pioneering oculoplastic and strabismus surgeon early in the previous century, the daughter of Phillip G. Spaeth MD, a major force in my residency at Wills Eye Hospital in the 1970’s, and the niece of George L. Spaeth MD, now head of glaucoma research at WEH, (and back when I thought I was going to be God’s Gift to Glaucoma my childhood idol.) After a successful career as an actress whose best known movie was “The World of Henry Orient” with Peter Sellers and Angela Lansbury and after graduating from Smith College as a cum laude graduate, she was a radio and television talk show host, a producer for ABC’s "20/20" and a reporter and writer for the Philadelphia Inquirer, the New York Daily News, Family Weekly and many other magazines and papers. After 2 years at the Federal Trade Commission as Director of Public Affairs, Ronald Reagan (a fellow actor) appointed her to be Director of Media Relations at the White House. More recently, she has used her Masters degree to create a major international company, Spaeth Communications, Inc., with offices in Dallas, Houston, Los Angeles, Memphis, Washington D.C., Portland OR, Melbourne, Singapore, and Stockholm! She does pro bono work for the Foundation, and gave a mind blowing two-hour seminar on getting your message across (without looking like a total fool) in today’s media environment. She used many instructive examples, including many from her client, Federal Express. For more, go to www.spaethcom.com. [I just spent a very enjoyable time at her web site. Do try it.]

One day, Edmond Spaeath was examining a patient who had previously been esotropic prior to his surgery, and who now obviously had a large overcorrection (consecutive XT). Spaeth turned around to the resident at his side and declared, “Hah! Any other man would have gotten half that result!” (Outrageous bluster, but with appropriate humility.)

More on Superior Oblique Palsy

In addition to the Costenbader Lecture, several other presentations were helpful re SOP. Andrea D. Molinari MD and Maria C. Ugrin MD of Ecuador and Argentina, respectively, found 33 of 198 patients with SOP who met their selection criteria for superior rectus overaction/contracture syndrome. Selection criteria were: (1) Vertical deviation of 15 PD or larger in the primary position (2) Equal or larger hypertropia on ipsilateral forced head tilt test than the one observed with the eyes looking straight ahead (3) More than 5 HT of the affected eye in the ipsilateral version. (4) Hypertropia in all up gazes [the “overaction” of “overaction-contracture”. (5) Overaction of the contralateral superior oblique. These were patients of longstanding and advanced SOP with a mean age of 34 years, a mean deviation in the primary position of 21 HT, and a mean deviation in ipsilateral version of 15 HT. [Jampolsky, repeatedly referred to in the presentation, would be pleased.] Ipsilateral SR recession 3 to 5 mm was helpful in these cases. [Note: In cases with shorter previous duration, the contracture may be present with an ipsilateral > 5 HT and hypertropias in down gaze, but with only small hypertropias in up gaze and only a trace of overaction of the contralateral SO. Note that in these cases it best to recess the ipsilateral SR modestly (following the general principle that a contracted muscle has to recessed less than a primarily or a secondarily hyperinnervated muscle), and surgery on the contralateral SO should be avoided. (Surgery on the contralateral superior oblique is an error in the Phil Knapp classification, as famously pointed out by Art Rosenbaum MD, several years ago, who as the strabismus surgeon of last resort in his area, had to deal with some patients who had suffered partial or total tenotomies of the contralateral superior oblique when what they really needed was a modest recession of the ipsilateral superior rectus. The last example case in my presentation at the 2005 Pre-Meeting at the AAO in Chicago was overaction-contracture of the ipsilateral superior rectus, the wife of the chief resident whose
diplopia in down gaze was cured with a modest 4 mm recession of the ipsilateral SR with 3 mm lateral transposition. After the surgery, she was able to enter and complete a residency in OB-GYN, impossible prior to the diplopia relief.

David R. Stager, Jr MD, Kirsten G. Locke CRA RN, David R. Stager Sr MD, and Joost Felius PhD used a “consumer grade” digital camera to capture binocular iris images before and 6 weeks after IO surgery. They analyzed these in Photoshop Elements software. The camera was an 8 Megapixel Nikon D40 K on a tripod. They found that changes in torsion resulting from strabismus surgery could be measured accurately in this way.

Superior oblique myokymia is usually mentioned in SOP discussions, and Burton J. Kushner MD performed superior oblique tenectomy and inferior oblique myectomy in a series of 14 patients with superior oblique myokymia. Pre-op, 2 had hypertropia of the affected eye of 7 to 8 PD consistent with ipsilateral 4th N palsy and 12 had no manifest tropia. At the final visit, all 14 patients were free of oscillopsia, 2 needed recession of the contralateral IR, and 3 needed prisms for diplopia, notably in down gaze.

**Other Vertical Strabismus**

Louise M. Garnham DBOT and John P Lee FCRS FRCoOpht identified 35 patients, 25 to 89 years old (mean 55 years) with isolated IR palsy. In etiology, 5 were microvascular, 3 followed cataract surgery, and 14 were suspected of having myasthenia gravis, with 8 of these 14 confirmed as having myasthenia gravis. They concluded that the conventional wisdom that IR palsy is frequently a sign of myasthenia gravis is, in fact, correct.

Ahmad Batal MD FRCS and Osama Batal MD of Saudi Arabia used autogenous palmaris longus tendon (PLT) as a SO expander in 4 children with severe Brown’s. Harvesting PLT was performed by the orthopedic surgeon in 3 patients and in a fourth case by the ophthalmic surgeon (See 3; do one.) These patients had truly severe Brown’s with 16 to 30 hypoT in the primary with consequent abnormal head postures. All were improved, none had extrusion or restrictive hypertopia in down gaze. The presenter noted that great care was taken not to violate the intermuscular septum (Tenon’s) and to enclose the tendon with surrounding fascia, precisely the kind of care that is important for a Wright silicone expander. The audience was not enthusiastic, but the discussion in the subsequent panel reaffirmed that Brown’s should not be operated unless there is a face turn or severe chin elevation with large hypertropias seen as the patient looks into the ipsilateral primary plane.

Sean P. Donahue MD PhD of Vanderbilt asked the question of whether A-pattern strabismus with overderepression in adduction could be a special form of skew deviation. [I thought I was the only one who noticed that patients with hydrocephalus may have the same A patterns with OASO as patients with spina bifida.] Donahue found that 11 of 13 patients had head tilt differences, rather than the reversing hypertropias that would be expected from primary oblique dysfunction. He reasoned that these findings are consistent with damage to the utricular pathways corresponding to those of the anterior semicircular canal, with a resulting posterior canal predominance. This proved to be a highly controversial idea among the neuro-ophthalmologists, with additional objections provided by Tom France MD and David Guyton MD.

Susana Gamio of Buenos Aires, Argentina, reviewed 14 patients with hypotropia and DVD. 7/14 were due to surgical overcorrection, 3 had deep unilateral amblyopia, and, most interestingly, 4 had asymmetric DVD which was greater in the fixing eye. [A reasonable surgical formulation in these cases would be asymmetrical large resections of the superior rectus muscles, with the usual nasal transposition to prevent XT in upgaze.]

**A New Mechanism for Dominant Duane’s**

Until now, I thought all cases of DRS were caused by the juxtapositional accident of the 6th cranial nerve sprouting from the midbrain being close to vestigial gill cleft tissues that undergo atrophy in the developing embryo. In most of us, half the 6th cranial nerve grows rostrally, eventually to innervate the LR, and half grows caudally to innervate tissue around the gill clefts. The caudal part normally undergoes atrophy, leaving only the rostral part intact. In DRS, all of the 6th N is attracted caudally to the tissues which undergo subsequent atrophy, and the entire 6th N undergoes atrophy. This leaves the LR un-innervated, and so it sends out a neuro-tropic hormone that attracts fibers from (usually) the 3rd cranial N that would normally innervate the MR. [See Mims III JL. Describing Duane’s Retraction
Syndrome. **Binocular Vision & Strabismus Quarterly** 2002;17:86-88.) At this meeting an alternative mechanism was introduced, specifically relating to hereditary DRS. Alessandro Iannaccone MD MS, Noriko Miyake MD Campioni BS, Alfonso Baldi MD, Natalie Kerr MD, and Elizabeth Engle MD of the Univ Tennessee in Memphis found a gene (G228S mutation in the CHN1 (DURS2) that interferes with developing motor neurons of the oculomotor nerve, leading to aberrant branching.

**Esotropia**

Keith W. McNeer MD, David Stager Sr MD, John Lee FRCS FRCOphth, Veronica Hauville MR (from Buenos Aires), Art Rosenbaum MD, and Alan Scott MD were on the panel of the workshop entitled "The Comparison of Botox® Versus Surgery in the Management of Infantile Esotropia." McNeer and his partner have routinely used a general anesthetic and direct visualization (with a small surgical incision) to administer the Botox®, at a total cost of about $2600 per visit to the O.R. McNeer's results and the results of a separate series from Ciancia indicate about a 65% success rate with reasonable follow-up. Malcolm Ing MD from the audience reiterated his study that infants straightened with botulinum has a much later age of alignment and poorer stereopsis. Stager Sr pointed out that impatient parents were likely to go to another pediatric ophthalmologist in the community if the first injection did not work. [One notable absence from the panel was Elbert Magoon, MD, who started his career in the early 1980's with botulinum injections in infants using an EMG-guided needle and rarely a general anesthetic. Imagine his chagrin when the patients were unhappy with the large and ugly XT followed by a return of the infantile ET! He did manage to use botulinum in about 30 children with esotropia before abandoning it. [Magoon did attend the meeting, but he pointedly was NOT on the panel.] Veronica Hauviler MD of Buenos Aires, Argentina, currently uses an injection of Botox® initially, but if it doesn't work, she proceeds directly to surgery, not a second injection.

One other presentation of botulinum for pediatric esotropia was a poster by Veronica Hauviller MD, Marcela Arrufat MD, Maris Sors MD, and Maria Gamio MD, all of the Children's Hospital in Buenos Aires, Argentina. They reviewed the long term outcome in 168 congenital esotropic patients receiving an average of 2 injections (2 sessions). A disappointing 45/168 were initially made orthotropic. Half had significant temporary ptosis. Using Kaplan-Meier, 80% of those who were aligned at 3 months remained aligned at 6 mos, 77% at 18 mos, and 66% at 120 mos. At 10 years follow-up, only 18% of those "initially" orthotropic (after 1 or 2 injections) remained orthotropic. Almost all other 82% had recurrent esotropia! They remain enthusiastic about botulinum for patients less than 1 year of age with deviations less than 40 ET. How dismal!

In contrast, a presentation from Mexico City analyzing results from 322 infantile esotropes was more favorable, with a success rate of 69% in 120 receiving surgery and a success rate of 59% in 322 receiving 1 or 2 injections of botulinum, with 41% of the "successes" requiring a second injection. They concluded that botulinum was a "viable" alternative to surgery in infants with deviations less than 30 ET, but their follow-up (less than 2 years) was not nearly as long as the data from Argentina. (Authors: Alejandra G. de Alba Campomanes MD MPH, Gil Binnbaum MD, Glorialicia Campomanes Eguiarte MD)

Irene Antebay MD, Claudia Yahalom MD, Hadas Mechoulam MD, and Evelin Cohen of Israel found 47 of 111 children with Down's syndrome had a strabismus, and the strabismus was esotropia in 46/47. Surgical success was very high, no matter what type of surgery was done, 13/15 successful. [I've always said that Down's are great fusers; that's why they almost never have OAIO or DVD.]

Matthew Emanuel, David Morrison MD, and Sean Donahue MD seemed to be unaware of my BVQ publication (Mims III JL, Wood RC. A three dimensional surgical dose-response schedule for lateral rectus resections for residual congenital/infantile esotropia after large bilateral medial rectus recessions. *Binocular Vision & Strabismus Quarterly* 2000;15:20-28) as well as unaware of my *J AAPOS* publication (Tran HM, Mims III JL, Wood RC. A new dose-response curve for bilateral medial rectus recessions for infantile esotropia. *J AAPOS* 2002;6:112-119.) in their surgical formulation for the second surgery for 38 children with infantile esotropia who had received up to 6.5 mm bilateral medical rectus recessions initially. Unilateral lateral rectus resections of 4, 5, and 6 mm resulted in 12, 13, and 15 prism diopeters of
esotropic correction respectively, similar to my own formula of 2 PD of effect/mm for these smaller residual deviations. For these surgeon-authors, bilateral lateral rectus resections of 5, 6, and 7 mm resulted in a mean correction of 20, 29, and 34 PD respectively. These values approximate the recommendations in my dose-response schedule for a previous bilateral medial rectus recession of 6 mm, which corresponds to the 50ET average for most published series of infantile esotropes. While this is nice (although approximate) verification of my own values, it seems primitive compared to the two-variable dose-response schedule (input variables of previous mm of bilateral medial rectus recession and prism diopters of residual esotropia with the output variable in the table of mm of recommended LR resection) that Paul Romano MD MSO persuaded Robert Wood and I to produce for our publication. Haven't they been reading BVQ?

Stephen P. Christiansen MD and dozens of co-authors from the PEDIG studied post-operative alignment in 68 children with infantile esotropia classified as having stable, uncertain, or unstable pre-op alignment and found 6-months post-op alignments of 2 PD, 6 PD, and 2 PD for stable, uncertain, and unstable pre-op alignment (p = 1.00). Among 99 with acquired ET, the 6-mos results were similar with 8 PD, 4 PD, and 6 PD for stable, unstable, and uncertain (p = 0.22). They concluded that postoperative alignment at 6 mos appeared to be similar for stable vs. unstable preoperative esotropic angles.

Tamara Wygnanski-Jaffe MD and Abraham Spierer MD of Israel found that developmentally delayed children who received a smaller recession of the medial rectus muscles when compared to a group of developmentally normal children receiving the "standard" amount of recession were frequently undercorrected, with only 56% aligned at the last visit. [I didn't get the N sample size, but it was a study done on 16 years of records.] [This is one of several studies that refute the classic study of John Simon MD that suggests reducing the dose-response amounts for developmentally delayed children. [I don't, and neither should you.]

David Weakley MD has once again harnessed the relative chaos of a large charity clinic to produce an interesting study of accommodative esotropes, correlating spectacle compliance with sensory and motor outcomes. As expected, Weakley and colleagues (Mohamed A. Hussein MD and Tomasz Wiraska) concluded that sensory and motor outcomes in accommodative esotropia are significantly worse in patients with fair or poor compliance when compared to those with good compliance.

Italy and Atlanta, Georgia, collaborated in a retrospective review of 40 young adults with an average of +3.06 D of hyperopia and accommodative esotropia whom they had treated with bilateral simultaneous PRK using the Chiron Technolas 217 eximer laser. Their 40 patients had a mean age of 27.9 years, a mean post-refractive-surgery hyperopia averaging +0.06 D at follow-up of 1 to 6 years (mean 3.4 yrs), with no reduction in best correctable visual acuity. The mean pre-op deviation was 10.6 ET and all patients were "orthophoric" without spectacle correction at one month, one year, and at the final visit if follow-up had been longer than one year. In their hands, at least, PRK appears to be safe and effective in treating low to moderate hyperopia associated with purely refractive accommodative esotropia in young adults. [I was surprised that the best correctable visual acuity did not drop a line. This may be because these adults were already in contact lenses. High hyperopes will have a better visual acuity with glasses than with contacts, because the glasses not only make the image in focus, but also make the image slightly larger on the retina. Contacts and refractive surgery at the corneal surface do not have this magnifying effect.]

David Mittleman MD described 5 patients with adult onset age-related distance esotropia (median age 70 y.o.) with pre-op deviations 24 ET, 16 ET' (medians). After bilateral medial rectus resections with adjustable sutures, the median deviations dropped to 2 E, 4X', with elimination of diplopia in all 5 patients.

David Coats MD and colleagues attempted to relate defective adduction (positive Urist test) in 41 patients with late consecutive exotropia (mean age of 29.5 yrs) and the intraoperative findings in regard to slipped muscles, stretched scars, and lost muscles. As expected, he found these types of problems in 41 of 43 eyes with an adduction limitation. Of course, this was a relatively uncontrolled study, since a comparable series of patients who had not experienced consecutive exotropia did not receive similar intraoperative observations. Indeed, when he
performed medial rectus exploration in 6 eyes without adduction limitation and consecutive exotropia, he found 2 of 6 with a medial rectus anomaly. Also, the severity of the adduction limitation did not correspond to the presence or absence of medial rectus abnormalities. [My own suspicion is that most cases of mild limitation of adduction in the context of consecutive exotropia are due to contracture of the antagonist LR. You can test this by a forced duction test going into adduction by placing a 5-toothed Lester or similar forceps on the conjunctival side of the lateral limbus and drawing the eye forward and into adduction under a stable plane of general anesthesia. Record the results as the mm between the center of the cornea and the medial canthal angle as the eye is brought into full adduction. Look especially for asymmetry. I strongly suspect that mild defective adduction as tabulated by Coats et al would correlate strongly with relative degrees of positivity of forced ductions measured under anesthesia by this method.]

Jeffrey D. Colburn MD, David G. Morrison MD, Robert L. Estes MD, and Sean P. Donahue MD PhD provided follow-up data on 100 patients referred from a preschool photoscreening program, who had +3.75 D of hyperopia or greater. 29% eventually received a diagnosis of amblyopia, and 40% eventually developed accommodative esotropia. [One wonders about these very high percentages. Perhaps the follow-up was much better on children who developed esotropia, due to parental concern.]

Fatih Mehmet Mutlu MD, Alpay Demirel MD, and Halil Ibrahim Altimsoy MD of Turkey correlated binocularity tested with Bagolini glasses, synoptophore, Titmus and Randot and correlated this with OKN asymmetry using a Barany drum and videonystagmography in 42 esotropic and 37 exotropic patients. As expected, there was a significant correlation (p = 0.001). [Coding Pearl: The code for the OKN test, 92534, is bundled by Medicare and private carriers into the eye codes. Also, Texas Medicaid does not bundle it into the eye codes, and the reimbursement is not trivial.]

Exotropia

Luxme Hariharan MPH, Burton Kushner MD, Yasmin Bradfield MD, and Michael C. Struck MD presented results of surgical treatment of 48 patients with exotropia and hypertropia and concluded that simultaneous SR recessions were better than vertical offsets for vertical deviations greater than 5 HT and that vertical deviations less than or equal to 5 HT tended to resolve with only horizontal surgery. [The Koreans would agree.]

Jason S. Montagos MD and Deborah K VanderVeen MD of Boston identified 27 patients who had received hemispherectomy for intractable seizures and who had no ocular comorbidities. 18/27 developed strabismus, 13/27 XT, 2/27 HT, and 3/27 ET. Because of the homonymous hemianopia in these patients, they pointed out that the exotropia would be adaptive, and should probably not be treated surgically.

I was really troubled by two presentations from the Mayo Clinic re exotropia. The first was poster by David A Leske MS, Sarah R Hatt, Brian G Mohney MD, and Jonathan M Holmes MD who were concerned about calculating "95% repeatability coefficients" for stereopsis based on data from 12 children with intermittent XT who were examined 3 or 4 times during a single day. WHO CARES? ONCE YOU KNOW THAT A YOUNG CHILD HAS X(T) OF THE DIVERGENCE TYPE WITH A DISTANCE DEVIATION LESS THAT 22XT, THEY SHOULD HAVE RECEIVED A 9 MM
RECESSION OF ONE LR

LAST WEEK. WHAT ARE YOUR WAITING FOR???

The other troubling presentation was by Jonathan Holmes MD in the otherwise wonderful PEDIG workshop, in which he was proposing a study comparing recess LROU with recess-resect. The literature is unequivocal in this regard. (J AAPOS, BVQ, Ophthalmic Surgery, Journal of Pediatric Ophthalmology and Strabismus)

For the child 1 to 5 years of age with a divergence excess XT of 22 XT or less, the best approach is a 9 mm recession of one LR. If the child is over 5 years of age and the distance deviation is at least 20 XT, the best procedure is a recess LROU according to the Korean protocol (adding up to 1.5 mm to the standard published mm) if the near deviation is greater than 10 XT or more than half of the distance deviation. Never recess LROU less than 5 mm. The best second surgery is a recession of the other LR if the first surgery was recession of one LR, and the best second surgery is a 5 mm resection of one MR if the original surgery was a recess LROU of 6 mm or more. If the original surgery was a recess LROU of 6 mm or less, then re-recession of both lateral rectus muscles should be considered. THE TIME HAS COME FOR A DEFINITIVE WORKSHOP ON THIS SUBJECT.

The geographic origins of the best papers include Philadelphia, Charleston, San Antonio, Dallas, Korea, and Iran.

List of Exotropia References that Brian Mohney MD and Johnathan Holmes MD Need to Read


Berland JE, Wilson E, Saunders RA. Results of large (6-8 mm) bilateral lateral rectus recessions for exotropia. Binocular Vision & Strabismus Quarterly 13:97-104.

Lee S, Kim JH, Thacker NM. Augmented bilateral lateral rectus recessions in basic intermittent exotropia. J AAPOS 2007;266-268


Mims III JL. Outcome of 5 mm resection of one medial rectus extraocular muscle for recurrent exotropia. Binocular Vision Strabismus Q 2003;18:143-150.

[The famous papers by Burton Kushner MD are not listed above; he has told me that in recent years he tended to favor the Korean approach rather than recess-resect.]

Bienvenidos a San Antonio!

March 24 - 28, 2012, the Annual Meeting of the AAPOS will be in my home town, San Antonio, Texas! It is a wonderful time of the year to come. Bienvenidos!

Next year’s AAPOS meeting will be in Disneyworld Florida at the Swan Hotel April 14-18 2010

DISCLAIMER: While the reporter has endeavored to be as accurate as possible in reporting the presentations at this meeting, the reader is strongly advised to confirm any information in this report before acting on it or applying it to patients.

On the next page are, in a montage, snapshots taken at the dance after the final meeting dinner. Our apologies to any who might be offended.....A good time was had by all obviously -per
Articles of Special Interest from other Strabology Publications


Our results suggest that fadenoperation of MR is an option to treat esotropias that disappear under anesthesia. The retroequatorial strapping we use seems safer than classical fadenopera-tion. We believe that the position of the eyes under general anesthesia should be considered for the surgical approach of esotropia.

(Dr. Thouvenin. dr.thouvenin@wanadoo.fr)

WARNING!!!!!


Researchers videotaped 139 patients as they instilled one drop of medication into their eye from two different bottle designs. Even though most patients reported relatively good performance, less than one-third successfully instilled a single drop - and only a single drop - without touching the bottle tip to the eye. Some patients failed to get the drop in their eye (17.2% and 25% with the 15 mL and 2.5 mL bottles, respectively.

Vision / Visual Acuity / Amblyopia


Spectacle correction during the preschool years results in a significant improvement in best corrected letter recognition acuity in astigmatic children by the time they reach kindergarten. However, gratting acuity was not improved and magnitude of meridional amblyopia was not reduced in children who had received early spectacle correction. (Velma Dobson PhD, Univ of Arizona, Dept Ophthalmology and Vision Science, 655 N. Alvernon Way, Suite 108, Tucson AZ 85711)


Significant refractive errors are uncommon in this population of urban preschool children. There was no evidence for a myopic shift over this age range (6 to 71 months) in this cross-sectional study. A small proportion of preschool children would likely benefit from refractive correction, but few have had this prescribed. (David Friedman, MD< MPH, PhD, Wilmer Eye Institute, Wilmer 120, 600 N Wolfe St, Baltimore MD 21210


Refractive surgery is appropriate in children with severe anisometropia or bilateral high ametropia that is resistant to conventional therapy. More information is needed before pediatric refractive surgery can be widely adopted by the ophthalmic community. This could be achieved with a large, prospective, multicenter, randomized, controlled clinical trial.

(Dr. Kim. Email: terry.kim@duke.edu)


Our findings do not indicate that peripapillary RNFL thickness is thinner in eyes with moderate amblyopia compared with their fellow eyes. (Michael C Repka, Email: mrepka@jhmi.edu)
Full or Partial Correction Improves Vision in Children with Hyperopic Amblyopia. Am J Ophthalmol February 2009. [AAOs Academy Express]

This retrospective case series of 182 children ages 3 to 7 found similar visual improvements with partial and full hyperopic correction after mean follow up two to three years. However, for children older than 5, full correction should be ‘undertaken with case’ because distance blur could hinder full correction compliance, while full correction might be required to avoid strabismus in younger children, particularly those with high degrees of hypermetropia.

Prescribing Common Near Activities for Children Undergoing Patching for Amblyopia is Unnecessary. Ophthalmology, November 2008 [from the AAOs Academy Express]

This trial randomized 425 children with amblyopia, ages 3 to 7 years old, to two hours of patching per day with near or distance activities. At 8 weeks, improvement in amblyopia eye visual acuity averaged 2.6 lines in the distance activities group and 2.5 lines in the near activities group. Also, children with severe amblyopia (20/100 to 20/400) showed improvement in visual acuity (3.6 lines) with two hours daily patching regardless of near or distance activities.

Binocular Vision


Youth baseball/softball players had significantly better static stereoaucuity than non-ball players, comparable to professional ball players. (Scott D. Boden, MD, 59 Executive Park South Suite 3000, Atlanta Georgia 30329)


Researchers retrospectively reviewed the charts of 38 patients with unilateral cataract who underwent cataract extraction with primary IOL implantation to analyze factors affecting the prognosis of stereopsis. Stereopsis was better in children with later manifesting cataracts, and in those with no strabismus, while the most important factor was good postoperative visual acuity in the affected eye.


Some strabismic patients with inconstant squint can fuse two images in a single eye, and experience lustre and depth. One of these images is foveal and the other extrafoveal. Depth perception was tested on 30 such subjects. Relief was perceived mostly on the fixated image. Camouflaged continuous surfaces (hemispheres, cylinders) were perceived as bumps or hollows, without detail. Camouflaged rectangles could not be separated in depth from the background, while their explicit counterparts could. Slanted bars were mostly interpreted as frontoparallel near or remote bars. Depth responses were more frequent with stimuli involving inward rather than outward disparities, and were the heavily biased toward ‘near’ judgements. All monocular fusion effects were markedly reduced after the recovery of normal stereoscopic vision following an orthoptic treatment. The depth effects reported here may provide clues on what stereoscopic pathways may or may not accomplish with incomplete retinal and misleading vergence information. (Dr. Ninio, Fax: 33 1 44 32 34 33)

Strabismus

Strabismus Negatively Impacts Patients’ Ability to Find a Partner. Br J Ophthalmol, June 2008 [from the AAOs Academy Express]

Researchers interviewed Swiss dating agents using a validated questionnaire. Of the 40 dating agents, 92.5% judged that strabismic subjects have more difficulty finding a partner.
Such difficulty was perceived as being greater in exotropic than in esotropic persons. Among the seven facial disfigurements considered, strabismus was believed to have the third largest negative impact on finding a partner, after strong acne and a visible missing tooth. ‘Because sur-gery in adults reduces not only physical but also psychosocial difficulties, it cannot be considered a cosmetic procedure’ wrote the authors.

**Strabismus Surgery**


We concluded that poor vergence eye movement’s performance, particularly those found for convergence in strabismic subjects could be due to impairment in the central structures related to sensory disparity inputs. Adaptive mechanisms promoted by the realignment of the eyes could be at the origin of the improvement in the vergence performances observed in our subjects after strabismus surgery. (Dr. Maria Pia Bucci. Fax: 33-1-40-03-53-62)


Since splitting of the horizontal rectus EOMs was noted in patients with congenital dysinnervation disorders, including Duane syndrome, Sevel’s theory that the horizontal rectus EOMs develop from the superior and inferior mesodermal complexes is considered to be reasonable. (Dr. Okanobu, Dept Ophthalmology, Okayama University Graduate School of Medicine, Dentistry and Pharmaceutical Sciences, 2-5-2 Shikata-cho, 700-8558 Okayama, Japan)

**Strabismus Surgery Outcome**


Design: A retrospective re-analysis of data from 2 previously published prospective randomized clinical trials on the treatment of intermittent exotropia with attention to the occurrence of the monofixation syndrome

Results: Of 215 patients undergoing surgery for presumed intermittent exotropia, 194 were over 3 years of age at surgery, had bi-foveal fusion, and did not have a preoperative manifest microtropia. None of them developed the monofixation syndrome after surgery. An additional 14 patients who had been previously excluded from these studies because they were too young for sensory testing were included in this study. Seven of them (50%) had the mono-fixation syndrome after surgery. A different 7 patients who had also been excluded from those prior studies because they had a constant micro-tropia prior to surgery which would build on alternate cover testing were also included in this study. All 7 had the monofixation syndrome after surgery.

The presence of the monofixation syndrome after surgery for presumed intermittent exotropia most likely reflects the fact that it was present preoperatively. Many of these patients manifest a constant micro-tropia preoperatively and hence should not be called intermittent exotropes. The term monofixational exotropia is more appropriately descriptive.

(Email: bkushner@wisc.edu)


[Bin]Ocular alignment instability is common in children with infantile ET, acquired non-accommodative ET or acquired partially accommodative ET. The impact of this finding on the optimal timing for strabismus surgery esotropia [needs] further study. (Dr. Stephen Christiansen, c/o Jaeb Center for Health Research, 15310 Amberly Dr, Suite 350, Tampa FL 33647.Email: PEDIGETS1Combined@jawb.org)
The official annual publication of the British and Irish Orthoptic Society. The Journal contains papers covering orthoptics, ocular motility, amblyopia, binocular vision, strabismus, related paediatric ophthalmology and neuro-ophthalmology.

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SURGICAL MANAGEMENT OF STRABISMUS

A Practical and Updated Approach, 5th edition

EUGENE M. HELVESTON, M.D.

Review by David K. Coats, M.D., Houston, Texas

Six pounds of pure muscle; no fat or byproducts here! That's what the 5th edition of Surgical Management of Strabismus packs. Quintessential strabismologist Eugene Helveston has done it again.

This classic textbook is once again jam-packed from cover-to-cover with all the information that the strabismologist needs to properly plan and execute the management of both simple and complex strabismus disorders.

The text is wonderfully illustrated with step-by-step instructions on how to perform all contemporary procedures that should be in the armamentarium of any serious strabismologist. One of my favorite "extras" in this textbook is a chapter that colorfully explores the history of strabismus surgery from its beginning. What most separates this edition of the textbook from previous editions is the inclusion of an extensive array of case examples complete with histories, clinical photographs, and details of surgical planning. While a few case examples were included in earlier versions, expansion of the case example section in this edition is so extensive that virtually any condition can now be reviewed in detail with a front row seat through the eyes of this world-renowned expert.

Space should be reserved for Surgical Management of Strabismus, 5th edition, in the bookcase of every ophthalmic surgeon. Undoubtedly this reserved space will be vacant most of the time, as this book is most likely to remain open and in constant use on the surgeon's desktop.

THE HISTORY OF STRABISMOLOGY

Edited by Gunter K. Von Noorden, M.D.

THE BOOK

The HISTORY OF STRABISMOLOGY is the first monograph devoted entirely to the development of strabismology in different regions of the world. Each of the co-authors has been assigned a special chapter in which his or her knowledge of the material is particularly profound. The origins of strabology go back to the beginning of medicine, thousands of years ago. The story how this specialty evolved from quackery and superstition in ancient times to its present state of sophistication is a fascinating one. It should be of more than passing interest, not only to those specialized in this field but also to others with an interest in the history of ophthalmology.

The book consists of approximately 400 pages and is abundantly illustrated with fine reproductions of old documents, engravings, drawings and historic instruments, many of which are from ancient and rare manuscripts. Printed on deluxe art paper THE HISTORY OF STRABISMOLOGY is bound by hand and gold embossed on book plate and spine.

THE EDITOR Gunter K. Von Noorden is a world-renowned author and strabologist. His expertise in the entire field of stabismus is documented in his textbook (now in its 6th edition) and uniquely qualify him to organize and edit a book on the history of strabology.

THE AUTHORS

The authors are prominent strabologists from different parts of the world, internationally known for their contributions. Indeed many have actually played an active part in shaping the history of strabismology during the second half of the 20th century. They are joined by a comprehensive ophthalmologist who is also an ophthalmic historian of international reputation and by one of the leaders of the orthoptic profession. The following contributed to this book: Henderson C. Almeida, MC, Shinobu Awaya, MD, Alberto Brown-Limon, MD, William E. Gillies, MD, Eugene M. Helveston, MD, Joseph Lang, MD, Emma Limon de Brown, MD, Gunter K von Noorden, MD, Hans Rmeky, MD, Geraldo Ribeiro de Barros, MD, and Gill Roper-Hall, DBOT, CO, COMT
MULTIMEDIA REVIEWS
LEE M. JAMPOL AND ANGELO P. TANNA, EDITORS


To quote Dr. Kushner, "Many roads lead to orthophoria." The treatment of strabismus, that "art form" with scientific underpinnings, can be the bane or the joy, or more likely both, of the ophthalmologist's existence. For those of us in pediatric ophthalmology, it is our "bread and butter" and the source of endless discussions and debates. There is enough science to provide a logical approach, and enough art to make things really interesting.

This book is a compilation of 68 cases published over 17 years in the journal Binocular Vision and Strabismus in its "Grand Rounds" section, edited by Dr. Kushner. The cases are presented in a standardized format, including summary of the therapeutic problem, history, eye exam, and final diagnosis. Dr. Kushner states that he was not attempting to solve a clinical problem for a specific patient but rather presenting an intellectual exercise with input from respected colleagues. Indeed, he does not present his own opinion, nor the actual results following treatment on most of the cases. Several experts in the field present opinions on the diagnosis and treatment. Each case is followed by the editor's perspective which highlights the issues raised. The cases cover clinical topics from nonparalytic vertical strabismus to cataract. There were 249 different individuals who served as discussants for one or more cases. This provides a broad perspective covering many schools of thought.

The cases are numbered and have descriptive titles such as "A Case of V-pattern Esotropia with Exotropia after Bilateral Superior Oblique Tucks." These allow for easy selection of cases for clinical purposes or teaching. The cases are interesting and informative analyses of complicated problems, primarily involving strabismus. However, although it is useful to have these case reports, previously published in a journal, collected together in one volume, it would have been more useful to have included outcomes and follow-up. Nonetheless, the compilation provides a thought-provoking read, an aid to clinical problem-solving, and a stimulating jumping-off point for teaching sessions.

Marilyn B. Mets, MD
Chicago, Illinois, USA
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Reviewing the literature: A proper review of the literature starts with a review of current and appropriate textbooks, especially the latest edition (currently the Sixth of von Noorden's Binocular Vision and Ocular Motility by Mosby, and Duane's loose-leaf text Clinical Ophthalmology. Anticipating a future requirement, it will only be to your credit now to specifically state what was included in your literature search, i.e., the topics or subjects and the sites searched. For any article submitted here that should include at a minimum, a Table. You can also get more material within whatever size tables too. We prefer spaces to lines to separate the items in your manuscript.

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We are honored to be asked and will most definitely be pleased to publish this lecture each year. We would encourage our readership to donate to this fund: Checks should be made payable to The University of Arizona Foundation with memo of "Stidham Endowment" and sent to Dr. Miller at U AZ, Ophthalmology, 655 N. Alvernon Way, Ste 108, Tucson AZ 85711. - PER

D. BRIAN STIDHAM MEMORIAL LECTURESHIP

LECTURE to be published annually in Binocular Vision and Strabismus Quarterly

Donations Solicited to Fund Lectureship

To the Editor:

The Pediatric Ophthalmology community lost a great doctor last October 6, 2005, with the death by murder of D. Brian Stidham. I am attempting to create an endowed lectureship to remember Brian in our community and within pediatric ophthalmology, and wonder if I could ask you to consider helping in this regard. I know that your journal concentrates on strabismus and binocular vision, but could I interest you in publishing the "Stidham Lecture in Pediatric Ophthalmology and Strabismus" that will hopefully be given on a yearly basis? I would work with the presenter to make certain that a manuscript would be produced that would be of acceptable quality. Having a target journal for the presentation would be a great carrot to draw top speakers to Tucson on a yearly basis to give such a talk.

We have raised $14,000 towards a target of $50,000 endowment that would ensure that the lecture would be perpetuated. I am committed to continue fundraising until the goal is met. If Binocular Vision and Strabismus Quarterly would serve as the publisher of the named lecture, I feel certain we will be able to both attract top speakers and donors to remember Brian in the years ahead, and to provide a great lectureship in pediatric ophthalmology and strabismus to our professional community which would enjoy greater readership and distribution.

Joseph M. Miller, M.D., MPH
Head, Ophthalmology and Vision Science
University of Arizona, Tucson, Arizona

In reply:

We are honored to be asked and will most definitely be pleased to publish this lecture each year. We would encourage our readership to donate to this fund: Checks should be made payable to The University of Arizona Foundation with memo of "Stidham Endowment" and sent to Dr. Miller at U AZ, Ophthalmology, 655 N. Alvernon Way, Ste 108, Tucson AZ 85711. - PER
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