OHIO AMBLYOPE REGISTRY

Lazy Eye News

Issue 6 February 8, 2010

Strabismus and Amblyopia

A closer look at a common cause of "Lazy Eye" and Surgical Treament

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Amblyopia is poor vision (usually in one eye) from disuse. One of the most common causes of amblyopia is a misalignment of the eyes, otherwise known as "strabismus." In this issue of the Ohio Amblyopia Registry newsletter, we will take a closer look at strabismus.

Strabismus is very common, affecting about 4% of children under six years of age. About 50 percent of children with strabismus develop the misalignment in early infancy. In other cases, the misalignment develops later in childhood. Strabismus is usually seen in otherwise healthy children. However, cerebral palsy, hydrocephalus, Down syndrome and other medical conditions can increase the likelihood of strabismus. A family history of strabismus is also a significant risk factor.

Experts do not completely understand the cause of strabismus. A few cases of strabismus are caused by a weakness of one or more eye muscles, often from damage to the nerves that control these muscles. *More* frequently (especially in children), strabismus is caused by an abnormality in the coordination of eye movements arising from mostly unknown problems within the coordination centers of the brain.

Strabismus cannot be outgrown in most cases. It can affect the vision and is a major cause of amblyopia. When a misalignment is present, children respond by "suppressing" (ignoring) their non-dominant eye. This often causes vision loss from disuse, otherwise known as "amblyopia. "

Normal alignment of the eyes is maintained by a complex balance of forces from the twelve muscles that move the eyes (six muscles for each eye). Some misalignments of the eye are best addressed with non-surgical treatments. For example, glasses (with or without prisms) can successfully treat some eye balance problems.

In other cases, surgery may be the best option. Ocular misalignment (strabismus) can often be improved by changing the forces acting on the eye by "relaxing" or "tightening" one or more of the eye muscles. This is generally done by moving the attachment point of the muscle on the eye.

The success rate of surgery is dependent on many factors. In general, one eye muscle surgery is successful in about 80% of cases. Intermittent (rather than constant) misalignments and the ability to use the two eyes cooperatively as a team are both factors that improve the chances that the surgery will be successful. Constant misalignments, poor vision in one eye, a history of previous eye muscle surgery, and

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The Ohio Amblyope Registry is funded by the Ohio Department of Health Bureau of Child and Family Services' **Save Our Sight Fund**, which recieves support from a donation opportunity on Ohio license plate renewal forms.

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Helping lazy eyes become healthy eyes.

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Strabismus and Amblyopia

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certain specific eye muscle problems are associated with a somewhat lower success rate.

Undercorrections and overcorrections are occasionally encountered after strabismus surgery. If a misalignment persists or recurs, or if an overcorrection occurs after eye muscle surgery, another surgery is sometimes recommended and is often successful.

Serious complications are very rare in strabismus surgery. Reduced vision as a result of retinal detachments, bleeding, infection, etc. occurs in one in 10,000 patients or less. If the child wears glasses before surgery, glasses will probably be necessary after surgery. Some patients who do not wear glasses before surgery can benefit from glasses after surgery to help maintain good eye alignment. In most cases, the glasses are not changed until at least six weeks after surgery.

Preparing for surgery

It will be necessary to avoid eating or drinking anything after midnight the night before the surgery. Infants under one year of age can often have clear liquids 4 to 6 hours before surgery. Most medications are not given until after surgery, although there are important exceptions (such as blood pressure medications and some diabetes medications). Patients receive detailed instructions by phone the day before the surgery.

On the day of surgery

Surgery is performed on an outpatient basis. Overnight stays in the hospital are almost never necessary. Patients arrive at the surgical facility two hours before their surgery to allow adequate time to prepare for surgery. Patients will meet the anesthesia team, who will perform an evaluation and administer a preoperative sedative to relax the patient. Patients over the age of nine or ten will have an IV placed *before* going into the operating room. Younger patients will not have an IV placed until they are asleep *in* the operating room.

Strabismus surgery in children is always performed under general anesthesia. In this case, patients are completely asleep during surgery and have no recollection of the surgery afterwards. A small incision is created in the *conjunctiva*, the translucent outer covering on the eye over the "white" of the eye. The incision is hidden behind the eyelid so that it is not visible after surgery unless the eyelid is pulled back. No incision is made on the skin. The eye is not removed from the socket. To expose the muscles that require surgery, the surgeon will gently move the eye no more than one normally moves his own eye. Once the muscles are visible, the surgeon will move the muscles as planned. Surgery generally takes about 30 to 45 minutes, although re-operations and other complex surgeries can sometimes be longer.

After a short period of observation in the recovery area and after receiving instructions for postoperative care, patients are discharged to complete their recovery at home. Most patients spend a total of 4 to 5 hours at the surgical facility.

After surgery

The amount of pain after strabismus surgery is variable. Some patients have very little pain. Generally, a patient will have some soreness for the first day, which can often be relieved with a cool cloth on the eyelid(s) and over-the-counter pain medications. There may be a foreign body sensation (like having an eyelash in the eye) for several days after surgery. Prescription pain medications are rarely necessary and are usually avoided, since they increase the risk of postoperative nausea.

The eyes will normally stay red for several weeks after surgery. Mild eyelid swelling and blood-tinged tears are normal after surgery. Excessive swelling, increasing redness, discharge, or bleeding should be reported to your surgeon's office.

A combination antibiotic/steroid ointment will be used several times daily to decrease the normal swelling that occurs with surgery and to decrease the risk of infection. The risk of infection can be further reduced by keeping the eye clean. Specifically, exposure to bath water and swimming pools is not recommended for two weeks after surgery. Showers are fine and can be resumed the day after surgery. No other restrictions on activities are necessary.

A change in eye position is usually apparent immediately after surgery. The initial alignment after eye muscle surgery fluctuates. The eye alignment cannot be reliably assessed for four to six weeks after the surgery.

Conclusion

Eye muscle surgery has become a highly skilled procedure that is often successful in restoring good eye alignment. As a result, many children and adults now benefit from improved appearance and function after successful eye muscle surgery. If you have any questions about eye muscle surgery, be sure to discuss them with your surgeon.

Top Referring **Ophthalmologists**

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4. Michael Bloom, M.D.
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5. Elias Traboulsi, M.D.
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6. Paul Rychwalski, M.D.
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7. Cybil Cassady, M.D.
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7. Rick Golden, M.D.
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8. Faruk Orge, M.D.
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9. Michael Yang, M.D.
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10. Bernard Perla, M.D.
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A Note from the Director

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Program Director, Ohio Amblyope Registry

Exciting things are happening with the Ohio Amblyope Registry (OAR)! Last year, we recruited almost 2,000 amblyopic children to participate in the program – this represents about 40% of all children who will develop amblyopia in a given year in Ohio. Our goal for the next few years is to recruit 60% of amblyopic children or about 3,000 amblyopic children in a year. You can help us reach this goal by telling everyone you know about this great program and to have them sign-up their amblyopic children. One important feature of the program is the distribution of free adhesive eye patches; every child receives 100 patches upon registration, and low income families are eligible to receive an additional 750 patches (about $300 value).

Ever wonder how your child with amblyopia compares to others in terms of their participation in the OAR? Check out a new web page at the OAR web site www.OhioAmblyopeRegistry.com/demographics.htm. The demographics page lets you know some very interesting information about the amblyopic children who participate in the program including age at the time of diagnosis of their amblyopia, race, county information, and who found that the child had a lazy eye.

We are also trying to reach out to non-English speaking parents of amblyopic children in Ohio. We have translated the most important information from the OAR into seven (7) foreign languages including Spanish, French, Chinese, Russian, Somali, Ukrainian, and Arabic.

Finally, regarding the OAR web site at www.OhioAmblyope Registry.com, we are receiving more and more hits as well as visitors to the site. In 2010, we predict to receive about 500,000 hits from 78,000 visitors. The OAR web site is very "sticky" and once you're there you won't want to leave!

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