



GRAVES' DISEASE & THYROID FOUNDATION

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Graves' Disease – Rehabilitative Surgery

by Clinton D. McCord, M.D., FACS

Correction of Protrusion of the Eye (Exophthalmos)

Once the inflammatory phase of Graves' disease has subsided, the person may be unfortunately left with some residual changes, such as eye protrusion, eyelid retraction, and in some cases, double vision. There are some corrective surgical procedures that can be done to help these problems, but it is important that the person's condition be stable before they are undertaken. Additional changes may occur if the person's situation is not stable, which might cause them to need more surgery.

Orbital Decompression

In most people the buildup of tissue behind the eye is not severe enough that it damages the optic nerve, but it may cause a striking forward protrusion of the eye which, in itself, is a distressing situation – not only from the standpoint of exposure of the eye, but also because of the disfigurement that it produces. Fortunately,

there has been developed over the years a procedure that can remedy this situation which is called an orbital decompression. With orbital decompression, the bony socket is enlarged to accommodate the extra tissue that has been deposited behind the eye and allow this tissue to expand so that the eye will settle back in a more normal position. Around the eyeball and orbit (the soft tissue in which the eye rests) are very large sinuses which provide ample space for expansion of these tissues. The sinus below the eye is called an antrum and the sinus towards the nose is called ethmoidal sinus. The antraethmoidal decompression was developed years ago to correct this problem and has been used satisfactorily for a number of years. In some extremely severe cases, the outside wall of the orbit (lateral wall) can also be removed for a "three wall" decompression, if needed. Most people require only a two-wall antraethmoidal

decompression. The method used to perform this operation is to turn the lower lid outward, and an incision is made behind the lid to remove the bones of the sinus. The small incision in the skin of the outside corner of the eye is the only external incision that is seen. After the lower lid has been turned over, an incision is then made in the pouch portion at the bottom of the lower lid on the inner surface of the lid to expose the bones underneath the eye. The bone underneath the orbit and on the inside portion of the orbit is then removed with tiny little forceps in a piecemeal manner until all the sinus under the eye and on the inside of the eye is opened up. There is a nerve of sensation which provides feeling to the upper lip running through the bone underneath the orbit, and great care is taken to nibble the bone away from this nerve so that it is preserved. Despite care, some numbness always occurs, although it is usually temporary. After the bones of the sinuses are removed, the covering of the orbital tissue (periosteum) is opened allowing the tissue

which is built up behind the eye (usually fatty tissue) to expand into the new spaces. In most cases, if the tissue is soft, an immediate effect will be noted with a settling of the eye. In some cases, however, time is required for final settling to take effect. In almost all cases, if needed, the operation is performed on both eyes at the same time. After the decompression is carried out, the eyelid stitches are placed behind the lid in the pouch and in the small incision of the skin in the outside corner of the eye. After surgery, ice compresses are used continuously together with other medications to prevent and reduce swelling. Short-term cortisone, sinus decongestants, and antibiotics are given.

RESULTS

The average amount of retroplacement of the eye (moving the eye backwards to a more normal position) is about 4-5 mm with the antral-ethmoidal decompression as an average in all patients. Obviously there may be differences in some patients.

ANESTHESIA

This surgery is performed under general anesthesia, and the patient will remain in the hospital 2 or 3 days. There will probably be a need for

assistance during the initial recovery period. Stitches are removed one week post-operative. A 4- to 6-week checkup will be needed.

Problems Involved with Orbital Decompression Double Vision

Many patients who undergo decompression already have some double vision. In most patients, orbital decompression does not adversely alter the pattern of double vision; however, in some people the double vision is helped, and in some people it can be made worse. Many people do not have double vision at all and we have not created any permanent changes to date in this situation. However, this is a distinct possibility and it is a problem with which surgeons are concerned. The person undergoing orbital decompression must be informed that conceivably some double vision or increased double vision could possibly occur following decompress. If it does occur, it could be treated either with muscle surgery or glasses with prisms.

Failure of the Effect

Other than bone removal, the main condition that affects settling of the eye in orbital decompression is how "stiff"

the tissue is which has built up behind the eye. Many people have very soft tissue buildup and this tissue will settle and expand and allow a good retroplacement of the eye. However, in some people the tissue is very stiff and fibrous, even though all the bone is removed and the periosteum is stripped, the tissue simply will not billow out as much into the new spaces allowing the eye to settle back. The tissue in patients like this acts more as if it has been glued together and is a rigid stiff body of tissue. Obviously, the effect will be much less in people who have stiff orbital tissue. In most cases it is difficult to determine before surgery exactly what the consistency of the tissue behind the eye will be; however, in general, people who have good eye rotations will have softer, more pliable tissue behind the eye. Occasionally there will be a difference between one side to the other as far as the pliability of tissue. In some patients there may be some asymmetry of position after surgery. Some people, of course, have some asymmetry of protrusion before surgery. Most asymmetry can be compensated for with surgical adjustment of the eyelid position.

Numbness of the Lips and Gums

The sensory nerve, contained within the floor of the orbit,

supplies feeling to the upper lip and gum and almost all of the time a temporary numbness occurs in the lips and upper gums. This is nothing that is visible, but is somewhat of a nuisance and, in most cases, dissipates within about two months. In some people with severe protrusion, the nerve may actually be removed to allow the eye to settle even more, and the person will then accept the fact that they will trade some numbness to allow the eye to settle to a more normal position. A change of permanent numbness does exist in some (very few) people.

Severe Bruising and Swelling

The operation takes place in an area that is very vascular with a large number of blood vessels and it is imperative that the person undergoing orbital decompression take no medication that will prevent blood clotting. No drugs containing aspirin or aspirin-like medication should be taken for a three to four week period before the surgery is undertaken. People with hypertension should have their high blood pressure controlled adequately before undertaking surgery. Severe bruising and swelling can impair a successful result, causing additional scar tissue to form. Excessive bleeding and

swelling of an extremely severe nature could conceivably cause loss of vision.

Loss of Vision

We have had no patient who has lost any vision at all, and to our knowledge, no patient in Atlanta or in this part of the country who has lost vision due to this surgery. However, it must be mentioned that loss of vision is always a possibility with any type of orbital surgery, and the cause of which would be presumably due to unusually severe swelling or some damage to the nerve behind the eye.

Need for Additional Eyelid Surgery or Eye Muscle Surgery

Most of the people who have Graves' disease with a protrusion of the eye also have retraction of their eyelids. After orbital decompression, the eye does settle back and slightly down so that there is a marked improvement in the lower lid position. The upper lids in most cases do not follow the eye back or down and "hang up", which does necessitate a second surgery loosening of the upper lids, which is done at a later date. The eyelid surgery is much less traumatic than the orbital

decompression and can be done as an outpatient under local anesthesia. A great improvement in the eye position and lower lids is obtained with orbital decompression. However, once a person undertakes to have corrective surgery, they generally feel like they would like to be restored as closely as possible to a normal condition; therefore, they will undergo this further upper lid surgery a few months after the decompression to get the final result. People with Graves' disease who undergo decompression who have double vision may notice some improvement or worsening. After resolution of all swelling of the decompression, within two to three months, any adjustments in the extraocular muscles can be made to improve the double vision.

Sinus Blockage

Orbital decompression is an operation that essentially borrows part of the sinuses to allow the eyes to settle back. Sinus decongestants are used before, during, and after surgery to insure sinus drainage and to reduce swelling in the sinus from the surgery. Many people who have a tendency to sinus blockage can suffer from sinus obstruction after orbital decompression. It is possible these people may have developed sinus blockage anyway which could require

drainage, but there is more of a tendency following orbital decompression. It is possible that this will occur either a few months after surgery or even years following surgery, therefore, necessitating surgical drainage (nasal antral window). Unfortunately, this is one of the possible side effects of the orbital decompressive surgery.

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