



## **ORBITAL DECOMPRESSION**

### **INTRODUCTION**

Surgery to lower the pressure within the eye (orbital decompression) has been used for over 100 years to treat many eye related diseases. The eye socket (orbit) is a space within your skull that has four bony walls and contains all the contents of the eye. These include the eyeball, the muscles that move the eye, the nerve of vision (optic nerve) and fat.

The surgery is performed when pressure in the eye socket is high. The goal of the surgery is to reduce the pressure by removing a wall or multiple walls of the eye socket. Much like when walls are removed from a room, the space is made larger. This, in turn, lowers the pressure on the eye. The procedure can be done by making incisions on the face or by using a small scope and camera. When a scope is used the procedure is called an endoscopic decompression. This approach is performed without any external incisions. The bones of the middle and lower wall of the orbit can be taken away safely. In the following sections, we will go over risks, benefits and when the procedure is needed.

### **INDICATIONS**

The reasons to perform an orbital decompression are many. Orbital decompression can help any disease which causes the pressure in the eye to rise. Disease that change the overall size of the eye can also be treated. These disorders can directly affect the vision and the appearance of the eye.

One of the most common diseases for which an orbital decompression is performed is Graves' disease. Patients that have the disease have cells in the body that attack normal cells in the thyroid gland. Fifty percent of patients with Graves' disease will see structures of the eye grow larger, typically the fat and the muscles of the eye. This can cause the eye to bulge forward. Also, the eyelids may not be able close all the way. When this occurs, the eye can become dry, leading to damage of the surface of the eye. The eye may also tear more than usual. Because the eye socket does not change in size, the enlarged eye muscles can cause double vision. The lack of space causes the pressure in the eye socket to go higher, which can damage the nerve of vision. This results in loss of vision.

Mild cases can be treated with eye drops and medications to decrease inflammation. In severe cases patients can have eye irritation, changes in appearance, double vision, or reduced vision. In these cases, lowering the pressure with surgery can help.

This surgery can be used for other eye diseases as well. These include injuries, infections, blood clots and tumors in the eye socket.

### **PROCEDURE**

Endoscopic orbital decompression is usually done in the operating room under general anesthesia. Going through your nose, your surgeon will first open the sinuses directly around the eye. Once complete, the bone of one or more walls of the eye, which separate the eye from the sinuses, is carefully removed. When removed, the thin lining (periorbita) around the eye can be seen. Cuts along the thin lining allows the fat and muscles of the eye to bulge into the sinuses.

The procedure makes the eye socket larger and lowers the pressure of the entire eye. Some diseases cause even higher pressure and the surgeon may need to make cuts on the face to further decompress the orbit.

Nasal packing is avoided in orbital decompression surgery. It is important to avoid nose blowing after the procedure. You may need to stay overnight in the hospital to monitor vision and eye movements.

## **RISKS**

The surgery involves operating in the eye and sinuses. There are risks of this surgery. These include the following:

- Double vision and loss of vision
- Bleeding from the nose and eye
- Cheek numbness
- Infection of the sinuses
- Injury to the tear duct
- Infection of the eye
- Leakage of brain fluid (See Cerebrospinal Fluid Leak)
- Infection of the brain fluid (meningitis)
- The pressures also may not be lowered enough

## **BENEFITS**

Removing part of the walls of the orbit, allows the eye to move into a better position within the eye socket. This helps with eye dryness, tearing, abrasions of the eye, and even the look of the eye. It can also decrease the pressure within the eye socket. This can help with problems of double vision or loss of vision. Success is difficult to estimate because there are many reasons for surgery. You should discuss whether the procedure is right for you with your surgeon.

## **SUMMARY**

Endoscopic orbital decompression surgery is common. The procedure increases the space which contains the eye. In conditions such as Graves's disease, the surgery can be very helpful. Speak with your surgeon to see if you are a candidate for this surgery.

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