

Surgery of the Facial Nerve

WHAT IS SURGERY OF THE FACIAL NERVE (TYMPANIC PORTION)?

This is a procedure to expose the tympanic portion of the facial nerve as it passes through the temporal bone (the "temple") behind the ear. An incision is made behind the ear; examination and any treatment is carried out with the aid of an operating microscope. The operation may consist of simple decompression to relieve pressure on the nerve, or it may involve repair of the nerve. More extensive damage may require a graft. The operation, which is carried out under general anesthesia, may take several hours. The hospital stay is usually brief, and recovery from surgery is prompt, but restoration of nerve function may take 3-12 months.

WHY IS IT PERFORMED?

The facial nerve controls the muscles that animate the face, smiling, blinking, grimacing, kissing, chewing. It is also involved in the sense of taste and the tear mechanism that bathes and protects the eyes. The nerve works by transmitting messages in the form of electrical impulses to and from the brain. If these messages are interrupted by compression of, or injury to, the nerve, muscle activity ceases and paralysis develops. Taste may be distorted or lost and the eye may become dry. The facial nerve, as it travels through its narrow, bony canal, may be compressed by tissues which swell in the presence of middle ear infection or a benign growth or bruising from a blow to the head. The nerve is vulnerable to injury during ear surgery or from a fracture of the temporal bone. Paralysis may develop gradually or it may appear overnight. The muscles become flaccid and the face looks lopsided. A careful assessment is made to determine the underlying cause: surgery is the treatment of choice where medical therapy is ineffective or inappropriate. It is indicated where trauma or tumor involves the facial nerve. Paralysis in conditions such as Bell's palsy (facial paralysis of unknown cause), Guillain-Barré (paralysis due to viral infection), and middle ear infection usually improves spontaneously or with treatment of the disease and are not treated surgically.

RISKS AND BENEFITS

Facial paralysis is disfiguring. It also deprives the affected person of facial expression, which conveys feelings and personality. Simple nerve decompression may result in a rapid recovery of movement. However, where nerve cells have been damaged or destroyed, recovery of normal muscle activity after surgery is slower. In these cases, paralysis may begin to improve about three months after surgery and improvement should continue for about a year. Repair of the facial nerve is carried out as soon as possible after trauma to give the best chance of recovery. Risks of this procedure are low and include, as well as the usual risk of general anesthesia, persistent or residual paralysis and infection.

THE PROCEDURE

PREPARING FOR SURGERY

The surgeon will take a complete medical history. You will be given a thorough physical,

including x-rays of the temporal region, and special tests to locate the lesion precisely. It is important to find out how far paralysis extends and whether it might get worse. Photographs may be taken to monitor your recovery after surgery. Any ear infection will be treated with antibiotics before the operation. You may be admitted to the hospital a day or two before surgery. The evening before the operation you should have a light meal and then nothing to eat or drink from midnight.

ON THE DAY OF SURGERY

You will be asked to take a shower or bath and wash your hair. Make-up or jewelry must be taken off and dentures removed. Your scalp will be shaved behind the ear. If a nerve graft is planned, the donor site will also be shaved. About an hour before surgery, you will be given premedication to relax you.

IN THE OPERATING ROOM

The surgeon works with you lying, anesthetized, on your back, with your head resting on a supportive ring. Once the incision has been made and the temporal bone is exposed. Special instruments are used to drill or chip away at the bone to reveal the bony canal that houses the tympanic portion of the facial nerve. With the aid of an operating microscope, the surgeon gradually removes the overlying bone with a fine diamond drill until the nerve sheath is exposed. No further surgery is necessary for simple decompression. However, if the nerve has been damaged or is compressed within the sheath, the sheath is opened and the nerve examined. Anything that may be creating pressure (for example, a bone splinter) is lifted off the nerve. Nerve fibers at any point along the tympanic portion that are found to be damaged must be cut away. If a very short segment is removed, the repair may be made by suturing the remaining uninjured ends of the nerve. A greater loss will make nerve grafting necessary. The nerve at the donor site, usually at the front of the thigh, is exposed through an incision. A section is cut to the required size and laid in the bony canal to bridge the gap in the facial nerve. The wound is closed, and a drain may be inserted to prevent a build-up of fluid and promote healing. The donor site is stitched. You will be moved to the recovery room briefly to be monitored as you come out of the anesthetic.

BACK IN YOUR ROOM

Your vital signs (temperature, pulse, blood pressure, respiration) will be checked frequently in the first few postoperative hours. You will feel sleepy and sore and possibly nauseous. You will be given painkillers as necessary and drugs to counteract any nausea. You will be encouraged to rest on your side, with the affected ear uppermost. Sudden head movements should be avoided as these may make you feel dizzy. You should be able to get out of bed on the first postoperative day, although it is probably best not to bend over for the first few days following ear surgery. The wound drain will be removed within 2-3 days and the sutures within about 5 days. You should use an ear plug or shower cap to prevent water getting into the ear when you take a shower or bath. Also, try not to sneeze or blow your nose for at least a week or two after surgery. It is important to clean your mouth after eating by rinsing well to remove any food from the space between your cheek and gums. Your eye must be protected until you can blink normally. You will be given eye drops to keep it moist and a shield to wear when you go outside to prevent damage. The physiotherapist will show you exercises that will

help to preserve tone in the facial muscles. You may be provided with a cheek splint.

GOING HOME

Before leaving the hospital you will be given an appointment for a postoperative checkup with your surgeon. You should take things easy for at least a week to ten days, avoiding crowded places where there is risk of infection. You should be able to resume most normal activities, including driving a car and returning to work, within 2-3 weeks. However, your surgeon may advise you to avoid swimming or any activity causing pressure changes in the middle ear (such as flying) until healing is complete. Restoration of nerve function is a lengthy process. If a repair or graft was performed, recovery of normal movement rarely begins before three months -- and often takes longer -- after surgery. Your progress will be observed carefully by the surgeon. In the meanwhile, you should continue to pay special attention to oral hygiene and to eye care on the affected side. You should also continue to exercise the muscles of the face to keep them in good condition. This will improve returning movement. A final assessment will be made about 12 months after surgery.

POSSIBLE COMPLICATIONS

Complications of surgery are rare.