

Reading Comprehension: *The Myringoplasty Procedure*

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Directions: Study the vocabulary words below. Then read the following passage on the myringoplasty procedure, and answer the questions that follow.

Vocabulary (see boldface words):

1. **bland** *adj.* – non-irritating
2. **minor** *n.* – a person younger than 18 years of age
3. **perforation** *n.* – a hole (perforated = *adj.*)
4. **spontaneous** *adj.* – occurring without a known cause; self-generated
5. **tinnitus** *n.* – A sound in one ear or both ears, such as buzzing, ringing, or whistling, that occurs without an external stimulus.

The Myringoplasty Procedure

Myringoplasty is surgical procedure performed to repair a **perforated** tympanic membrane, which is commonly known as the eardrum. When perforation occurs, bacteria can easily pass into the middle ear, potentially causing ear infections. The main cause of perforation of the tympanic membrane is upper respiratory infections. Upper respiratory
5 infections cause an accumulation of fluids in the middle ear, which results in an increase in pressure behind the eardrum. The increased pressure causes severe pain and **spontaneous rupture**. Other causes of perforation of the eardrum are trauma resulting from a foreign object in the ear or an explosion, negative pressure from underwater diving or an airplane flight, loud noise, or pressure from a tumor in the middle ear. Drainage tubes that remain in the ear
10 from a previous surgery also sometimes cause perforation of the tympanic membrane. After the rupture of the eardrum, hearing loss and discharge sometimes develop. Approximately 88% of ear drum perforations heal spontaneously, but when the perforation is large, myringoplasty is often required. Myringoplasty, which is performed on people of all ages, is successful in 90% of cases. Patients contemplating this type of surgery need to understand the
15 steps involved in preparing for the surgery, the procedure itself, and in the recovery period.

In the first stage, the patient is prepared for the myringoplasty procedure. Other ear, nose, and throat conditions are usually treated before it is conducted. For example, infections in the ear of any type, such as otitis media, make the operation much more difficult, possibly ruining the reconstruction. In addition, a hearing test is performed to document any hearing
20 deficiency. The eardrum is also examined before the surgery using a special operating microscope. When the ENT doctor, who is a specialist in problems of the ear, nose, and throat, determines that the patient is truly a candidate for myringoplasty, he informs the patient, or the parent of the patient in the case of a **minor**, about the risks of the surgery. These include failure of the graft to heal, narrowing of the ear canal, hearing loss, and facial
25 nerve injury, as well as **tinnitus**. Tinnitus usually improves after closure of the eardrum, but it sometimes temporarily worsens after the operation. When the patient understands these risks, he signs a consent form. If the patient is a child, it is important for the parent to explain the upcoming surgery to the child. A calm, reassuring attitude will greatly ease the child's anxiety. If the surgeon recommends certain medications prior to surgery, these are taken
30 without exception to ensure a successful outcome. Six hours prior to the surgery, the patient fasts because anything in the stomach increases the possibility of complications due to the anesthesia.

The next stage is the procedure itself, which is typically carried out in the hospital. Initially, a general anesthetic is administered to the patient, but sometimes a local anesthetic is used together with intravenous sedation. When the anesthetic takes effect, an incision is made in the ear canal, and the eardrum is moved away from the bony ear canal and lifted forward. Next, the surgeon uses a special operating microscope to enlarge the view of the structures in the ear. If the perforation is very large or the hole is far forward and out of the surgeon's view, an incision is made behind the ear in order to provide access to the perforation. The surgeon then decides on which type of grafting material to use. For a live tissue *graft*, tissue is taken from the tragus, which is a small cartilaginous lobe of skin in front of the ear, or it is removed from the back of the ear or a vein. The extracted tissue is then thinned and dried. At this point, an absorbable gel sponge is placed under the eardrum for support, and the *graft* is attached around the outsides of the hole. More gel sponge is then placed against the top of the graft to prevent it from sliding out of the ear when the patient blows his nose or sneezes. If an opening was created behind the ear, it is stitched together. As these stitches are generally buried in the skin, they do not have to be removed later. To conclude the operation, a sterile patch is placed on the outside of the ear canal.

Recovery is the third stage of myringoplasty. After the procedure is completed, the patient spends a few hours in the recovery room, after which he is generally discharged and given antibiotics along with a mild pain reliever. In the immediate post-operative period, vertigo, nausea, and vomiting are sometimes experienced. It is therefore preferable to limit food intake to liquids or light, **bland** foods. The patient resumes his regular diet the day after surgery but may experience difficulty in fully opening his mouth. For a week after the surgery, the patient sleeps on three pillows, preferably on the ear that was not operated on. Seven days after the operation, the stitches and gel-foam packing are removed. The patient is allowed to return to work two weeks after the surgery, but he keeps the ear dry and avoids activities that change the tympanic pressure, such as sneezing with the mouth shut, using a straw to drink, or heavy nose blowing, for a minimum of three weeks. Six to eight weeks after the surgery, a hearing test is performed.

In conclusion, myringoplasty is a generally successful surgical procedure that is performed to repair a perforated eardrum. It involves evaluating and preparing the patient for the operation, during which a graft is created and attached over the hole in the eardrum. The recovery period involves keeping the ear dry and avoiding activities that produce pressure within the ear.

Myringoplasty Questions

- 1) The tragus is a small lobe of skin in the back of the ear.
 - a) true
 - b) false
- 2) Which of the following sometimes occurs both before and after the surgery?
 - a) tinnitus
 - b) nausea
 - c) facial nerve injury
 - d) pressure
- 3) Which of the following is true concerning fasting?
 - a) Prior to surgery, the patient fasts to avoid vertigo.
 - b) The patient fasts both before and after the surgery.
 - c) The patient fasts before the surgery, but it is only advised post-surgery.
 - d) Although the patient can eat and drink after the surgery, it is contraindicated prior to the surgery.
- 4) Which of the following statements concerning the actual procedure is true?
 - a) A graft is created from tissue taken from another part of the ear.
 - b) The incision is made in one of three places.
 - c) A special endoscope is used to view the inside of the ear.
 - d) The perforation is filled with an absorbent sponge.
- 5) Infections are both the cause and result of perforated eardrums.
 - a) true
 - b) false
- 6) Which is the correct order of steps during the procedure itself?
 - a) graft created, patient anesthetized, gel placed under eardrum, patch placed
 - b) patient anesthetized, first sponge applied, second sponge applied, graft placed
 - c) structures viewed, incision made, gel sponge applied, graft attached
 - d) patient anesthetized, incision made, sterile patch applied, gel sponge placed
- 7) Although fasting for six hours prior to the surgery is required, the patient continues to take medications as advised by the doctor.
 - a) true
 - b) false
- 8) Live tissue grafts are one of several types of graft that the surgeon can use.
 - a) true
 - b) false

- 9) Which of the following statements about myringoplasty is false?
- a) Most cases of tympanic perforation require myringoplasty.
 - b) The procedure can be performed on infants as well as the elderly.
 - c) Some patients with perforations may have already undergone an ear operation.
 - d) An alternative name for “eardrum” is “tympanic membrane.”
- 10) Which is **not** a cause of tympanic perforation?
- a) a foreign object in the ear
 - b) diving
 - c) a cold
 - d) discharge
- 11) Myringoplasty surgery is required to heal the perforation.
- a) true
 - b) false
- 12) Which of the following is allowed during the two-week period following the surgery?
- a) sneezing with the mouth closed
 - b) going back to work
 - c) drinking from a straw
 - d) eating normally
- 13) Myringoplasty is **not** performed when the patient has an ear infection.
- a) true
 - b) false
- 14) The word “rupture” in line 6 most closely means _____.
- a) pressure
 - b) expansion
 - c) breakage
 - d) swelling
- 15) The word “reconstruction” as used in line 19 refers to the patient’s _____.
- a) hearing
 - b) graft
 - b) stitches
 - c) eardrum
- 16) “Candidate” in line 22 most closely means one who is _____ the surgery.
- a) interested in
 - b) desirous of
 - c) suitable for
 - d) agreeable to

17) The word “graft” in lines 39 and 42 most closely refers to a _____.

- a) sample
- b) patch
- c) hole
- d) repair

18) “It” in line 25 refers to the patient’s _____.

- a) tinnitus
- b) perforation
- c) eardrum
- d) hearing