CASE REPORT
AN UNUSUAL CAUSE OF TYPANIC MEMBRANE PERFORATION

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ABSTRACT

This case report is about the lady who underwent myringoplasty for repair of tympanic membrane perforation under general anaesthesia. During recovery from anaesthesia, she vomited and due to this incident she developed perforation of tympanic membrane of healthy ear. Unfortunately this perforation never healed and the lady now is scheduled to undergo myringoplasty of the other ear.

Key words: tympanic membrane, traumatic perforation, myringoplasty.

INTRODUCTION

We are reporting an unusual and bizarre case of tympanic membrane perforation. One of our patients developed tympanic membrane perforation due to a strange phenomenon while recovering from a general anaesthesia. We think that this sort of occurrence has never been mentioned in literature but theoretically it can occur in other cases too.

CASE REPORT

A 22 years old young lady had tubotympanic disease of right ear. Her ear was dry for the last three months. She had a central perforation of moderate size in right drumhead, and her right tympanic membrane was perfectly healthy, with good hearing power. After the completion of necessary prerequisites she was offered surgical treatment, that is, myringoplasty, to be performed under general anaesthesia. A day prior to the operation her pre- anaesthetic evaluation was done and she was told to remain nil by mouth after midnight. Inquiry regarding intake of any food material was made on the day of operation and even on the operating table, before inducing anaesthesia. Her answer was always negative. Cuffed endotracheal intubation was performed. Myringoplasty was carried out by endaural approach. Temporalis fascia was used for the graft and it was placed by underlay technique. After completion of the operation and dressing of the right ear, patient was handed over to the anaesthetist for recovery. As patient was coming out of anaesthesia she vomited. Immediately patients head was lowered and she was put in left lateral position. Thorough suctioning of the throat was carried out. Rest of the recovery was uneventful. Patient was sent back to the ward. She immediately started complaining of pain in the left ear. Analgesics were administered which gave her temporary relief. Patient confessed after complete recovery from anaesthesia, that she had taken some snacks and tea two hours prior to the operation, as she was feeling very hungry. She didn’t tell anyone, as she feared that her operation would be postponed.

On recurrence of pain in left ear she was examined by otoscope. Surprisingly her left drumhead showed a perforation with ragged margins. The margins were hyperemic so was the portion of external auditory canal. As she was already on antibiotics, these were continued and she was advised to keep the left ear absolutely dry. She was discharged from the hospital on third post-operative day. Patient came back to the hospital on seventh post-operative day for removal of stitches but complained of feeling of slight discharge from left ear. She was examined in outpatients and purulent discharge with central perforation was noticed on examination of left ear. Pus was sent for culture and sensitivity report but no organism could be isolated.

Patients left ear became dry after a course of quinolones and regular aural toilet. Meanwhile graft in the right ear was healthy and hearing had improved. The audiogram done after few weeks from operation showed closure of air-bone gap in right ear but the left ear showed conductive deafness with good cochlear reserve. Similarly, tuning fork tests also showed that conductive loss was present in left ear now.

After six months of operation, on follow up examination, it showed that our operation on right ear was a complete success. Unfortunately, the left ear
showed persisting, round, central perforation in antero-
inferior compartment with conductive loss. This time
patient was offered surgical treatment that is
myringoplasty for the repair of perforation in left

DRUSSUION

Traumatic perforation of tympanic membrane is not
an unusual occurrence. Exact incidence of tympanic
membrane perforation is unknown. Nelson in 1984,
described 4% of Native American children had tympanic
membrane perforation. In 1999, Golz found 3% of children
treated with ventilation tubes in America had this
condition. Incidence in general public has not been
studied, however. Even the exact number of surgical
repairs of tympanic membrane perforations performed
each year in America is not known. Analysis of US
government statistics indicates perhaps 150,000
tympanoplasties performed per year in a population of
250 million.

Any abrupt change in the air pressure in the external
auditory meatus can cause injury to drum head. This
pressure change can occur in a variety of ways, including
a blow on ear with a cupped hand, by use of some needle
or pointed object in the external auditory meatus, by an
explosion, by strong eustachian tube inflation or by
barotraumas. It can also occur in various surgical
procedures performed on the middle ear cavity /
tympanum.

The diagnosis is always clinical. Almost always there
is some history of trauma. On examination a jagged or
linear, rarely a circular tear is seen, sometime with tiny
points or haemorrhage along the margin. The
management is by immediate application of a disc of
cigarette paper moistened with Ringer solution or 1% 
phenol in glycerin to make it adhere to the tear in
tympanic membrane, and this acts like a splint,
preventing the edges from curling under and so promoting
rapid healing. Another method is to approximate the
edges of the tear and than apply a small disc of Steri-
strip tape.

Mostly no measures are required and all that is
needed is 'masterly inactivity'. It heals by itself in the
majority of cases unless the perforation is very large or
secondary infection sets in.

In the above-mentioned case patient developed a
tear in tympanic membrane because she vomited while
recovering from anaesthesia and was placed in left lateral
position. The vomitus trickled down to the dependent
ear and caused chemical burns of the drumhead. We
also presumed that some vomitus might have reached
the tympanum and actually caused infection in the
middle ear cavity, thus leading to persistence of
perforation.

This is an unusual occurrence but it should be kept
in mind: as this can theoretically occur in almost any
case. This cause of tympanic membrane perforation has
not been mentioned in the literature (as far as our
research goes). The knowledge of this complication will
help the anaesthetists and otolarngologists to be aware
of this unusual phenomenon.

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