

Spontaneous Unilateral Haemotympanum: An Occult Complication of Angiography

Ameya Bihani¹, Yogesh Dokhe², Priyanka Hardikar², Jaini Lodha³, Jyoti Dabholkar⁴

¹Speciality medical officer, ²Resident, ³Senior Register, ⁴Professor, Department of ENT, KEM Hospital, Mumbai, India

*Corresponding Author:

Name: Ameya Bihani

Email: ameyabihani87@gmail.com

Abstract: Spontaneous unilateral haemotympanum secondary to non-therapeutic use of heparin is of very rare incidence. We present here a case of 52 year old male presenting with sudden onset hearing loss within few hours of angiography due to development of right side haemotympanum.

Keywords: Haemotympanum, Anti-coagulants, Myringotomy.

INTRODUCTION

Haemotympanum is generally secondary to trauma or as a sequale to secretory otitis media. It may also occur due to underlying bleeding disorders and barotrauma. Haemotympanum secondary to iatrogenic use of heparin flush in angiography is very rare. Here we present a case of hemotympanum secondary to systemic use of diluted dose of heparin in non – therapeutic dosage.

CASE REPORT

A 52 year old male patient presented with a history of sudden hearing loss in right ear associated with sensation of ear block and dull ear ache. Patient had a history of angiography done 2 days back, developed the symptoms 2 hours post procedure. He was a known case of ischemic heart disease and was on Aspirin 75 mg OD since 10 yrs. There was no history of trauma or sudden pressure changes either due to swimming or aviation travel. On otoscopy, tympanic membrane was found intact but bulging with bluish discoloration suggestive of hemotympanum.

Tuning fork tests were suggestive of right ear moderately severe conductive hearing loss with Rinne's test was negative for tuning fork frequencies 256, 512 and 1024 hertz and weber lateralized to the right side. There was no previous history of any reduced hearing or any otological procedure. There was no history of recurrent rhinitis or nasal obstruction.

HRCT temporal was suggestive of hemotympanum with contrast was done. There was no

evidence of fracture, dehiscent jugular bulb or vascular malformation.

Pure tone audiometry revealed right ear severe to profound mixed hearing loss with air bone gap of 47.5 dB and left ear mild to moderate sensorineural hearing loss. Examination under microscope and hemotympanum was confirmed by aspiration test. Myringotomy was done in antero-inferior quadrant of the tympanic membrane. Patient had immediate subjective relief of aural fullness and improvement in hearing. Post-operative audiogram showed closure of air-bone gap by over 27 decibels with residual air bone gap of less than 20 decibels.



Fig. 1: Endoscopic view of Right sided hemotympanum



Fig. 2: HRCT temporal (coronal and axial views) depicting hemotympanum

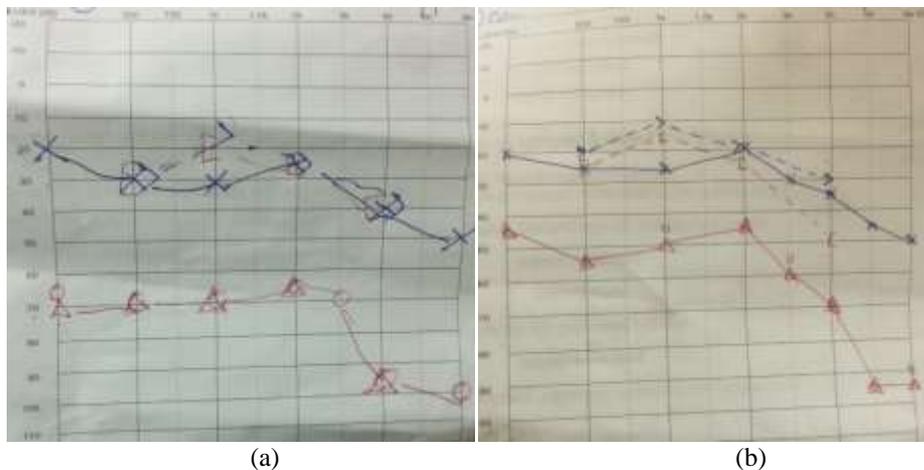


Fig. 3a: Preoperative PTA with air-bone gap of 47 dB, 3b: Postoperative PTA with air-bone gap of 20 dB

DISCUSSION

Hemotympanum is the collection of blood in the middle ear cavity. It is diagnosed by otoscopy where an intact but bulging tympanic membrane is seen with bluish or dark brownish discoloration. Most common differentials for such a clinical picture are dehiscent and high riding jugular bulb, any vascular malformation of middle ear or glomus tumour. All these differentials can easily be ruled out by doing a High Resolution Computer Tomography scan of temporal bone with contrast.

The most common cause of hemotympanum is trauma to temporal bone. It is accompanied with fracture of temporal bone with occasional intracranial injury and haemorrhage. Other cause of hemotympanum are therapeutic nasal packing, epistaxis, chronic otitis media with effusion, blood dyscrasias, sudden pressure changes during diving or ascent in the aerospace and anticoagulation [1].

In our case, the patient was on aspirin tablets for more than 10 years with normal platelet function. During the angiography, the catheter is flushed with a diluted solution of heparin continuously to maintain

patency. Generally, the heparin is diluted to a level that it does not cause any internal bleed but in our patient we contribute the haemotympanum to the heparin flush used during the procedure. Complication of hemotympanum after a diagnostic angiography is not be previously documented, most probably due under-diagnosis. As cardiologists do not suspect this level of heparin to cause any major internal bleed, post-operative coagulation profile was not done. But our experience from this case, we recommend to do immediate post-operative coagulation profile and to keenly look for subtle internal bleed as hemotympanum as these can easily be managed if diagnosed early.

Spontaneous unilateral hemotympanum is a very rare phenomenon. The most attributed theory for this is pathologic continuum of spectrum of secretory otitis media [2]. Eustachian tube dysfunction is also attributed to the cause of such condition due to stasis of peritubal lymphatic stasis [3].

Management of hemotympanum is generally conservative. Oral anti-histaminics with a course of nasal decongestants is given for at least 2 weeks along with correction of any underlying blood dyscrasias. If

not responding to this, a trial of myringotomy with evacuation of clot and option of myringotomy tube can be considered. If still not responding, cortical mastoidectomy with exploratory tympanotomy can be done. In our case, we resorted to immediate myringotomy in view of massive haemotympanum with prominently bulging tympanic membrane. We did not consider using grommet as the precipitating factor was a single exposure of diluted heparin.

CONCLUSION

Hemotympanum secondary to non – therapeutic dose of systemic heparin flush is very rare but should be looked for in cases of post angiography patients with hearing loss or ear fullness. Initial evaluation of a blue middle ear mass includes an audiogram and computed tomography (CT) scan with intravenous contrast. CT may identify congenital vascular malformation or bone erosion due to chronic otitis media or tumors [4].

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