

**Case report**

**Medial migration of grommet: Iatrogenic foreign body.**

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**Abstract**

Myringotomy and grommet insertion is a common surgical procedure in paediatric. It is relatively simple and safe procedure but few complications has been documented. We presented here a case of migration of grommet ventilation tube into the medial ear which is a very rare complication.

**Keywords:** grommet, complication, middle ear

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**Introduction**

Myringotomy and grommet insertion is the surgical option for persistent Otitis Media with Effusion (OME). A retrospective study by Djordjeviy V, et al found that the most common long term complications of myringotomy and grommet insertion were atrophic tympanic membrane, followed by tympanosclerosis, persistent perforation, retraction of tympanic membrane, granulation tissue formation, sensorineural hearing loss and cholesteatoma.<sup>1</sup> However, none of the patients had medial migration of the grommet into the medial ear.

**Case report**

A 6- year- old boy was referred to ORL clinic for suspected foreign body in the left ear. He went to a GP to seek treatment for upper respiratory tract infection. He has no complaint of ear pain or discharge and no nasal symptoms. Otoscopy finding as below (Figure 1).

From history noted that he was one month post grommet insertion and adenoid curettage which was done at our centre. The indication for surgery was bilateral middle ear effusion with bilateral moderate conductive hearing loss. Intraoperatively was uneventful, both grommet were inserted with ease at first attempt and glue sticky ear fluid was noted

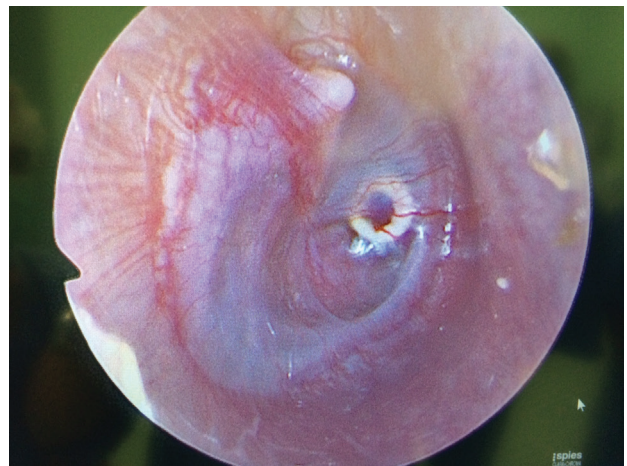


Figure 1: Whitish object behind intact TM closely resembles grommet tube.

and sucked out. The grommet that was used were Shepherd myringotomy tube.

He was then reviewed two weeks post operatively during outpatient clinic follow up. He had no ear symptoms; otoscopic examination shows both grommet in situ and functioning. He was given next follow up review at one month post operative. However, he presented earlier due to this referral.

Based on history and otoscopy finding we concluded that the grommet in the left ear has migrated

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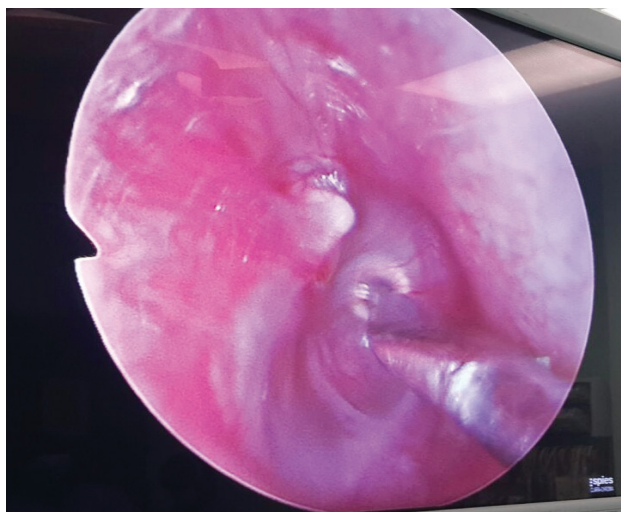


Figure 2: Myringotomy incision on the left tympanic membrane

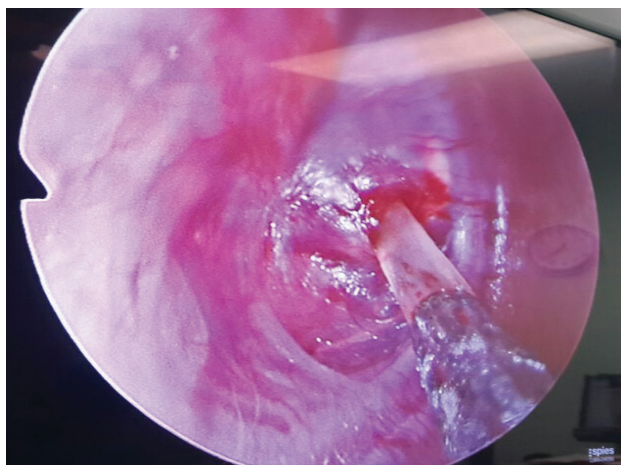


Figure 3: Thick secretion was sucked out from the middle ear

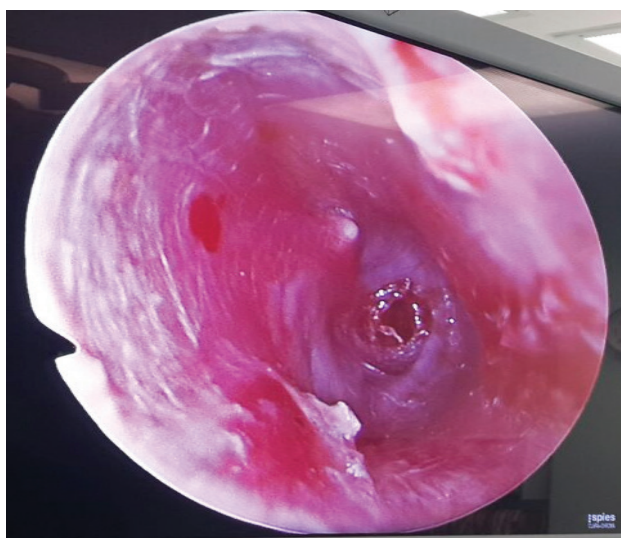


Figure 4: Post removal of grommet with myringotomy incision on the left tympanic membrane



Figure 5: Left tympanic membrane after 6 weeks post removal of middle ear grommet shows healed and intact tympanic membrane

medially into the middle ear and covered with thin tympanic membrane. After discussion with parents regarding the situation, they decided for removal of the grommet.

Removal of grommet tube (Figure 2 -4) was done. Patient was well and asymptomatic during subsequent follow up.

#### **Discussion**

Medial migration of grommet tube account about 0 to 1.1 % of cases.<sup>1</sup>The rarity is possible due to underreported case as it is usually asymptomatic.

Physiologically, the grommet tube will be extruded into the external ear canal following the outward migration of the epithelial layer of tympanic membrane. Boedts postulated that extrusion of the grommet into the external ear canal is due to keratin accumulations under the phalange of tube that leads to slowly extrusion of the tube.<sup>2</sup> However, theories behind the medial migration of the grommet tube is still debatable. Few postulated theories were as proposed by Kumar et al where the long myringotomy tube incision is the possible cause.<sup>2</sup> Green et al, however proposed the patients factor such as abnormally deep hypotympanic cleft as the cause.<sup>2</sup> This has been proved when there was a case where the new grommet inserted after removal of middle ear grommet re-migrate into middle ear after 12 month.<sup>3</sup>

A simple classification of middle ear migration of grommet has been proposed by Groblewski et al. They classified this condition into 2 types based on the interval duration of migration of the grommet and proposed the possible aetiology. The primary migration occur as early as two weeks to

one month after surgery. It is believed to be due to large myringotomy incision which can cause easily dislodged grommet into the middle ear. While secondary migration refer to migration of grommet into the middle ear which is previously in normal position. It is diagnosed as early as six month after surgery. They postulated that the secondary migration is due to negative middle ear pressure, related to Eustachian tube dysfunction or blocking of the other end of grommet tube with debris. In our case, the migration of grommet into middle ear is within one month postoperative and it is possible due to large incision site.

Patient with medial migration of grommet might be asymptomatic. However, sixty-percent of patient with medial migration had long terms complications such as chronic recurrent otitis media and inflammatory reaction on the grommet.<sup>2</sup> The other long term complications are ossicular destruction, cholesteatoma formation as well as traumatic perilymphatic fistula due to foreign body inflammatory reaction of the grommet.<sup>3</sup>

Should grommet in the middle ear removed or not is still debatable. Review articles by A. Bezdjian et al suggested that grommet in the middle ear should be treated as foreign body. Even though patient may be initially asymptomatic, later complications may be hazardous and difficult to treat. They suggest that all the grommet in the middle ear should be removed at the initial diagnosis since removal is safe and simple procedure rather that treated the complications. As in our case, the removal of grommet was successfully done and subsequent follow up was uneventful.

As a conclusion, medial migration of grommet should be treated as iatrogenic foreign body of middle ear. Commonly it is asymptomatic and may be missed thus past surgical history is very important. General practitioners as well as family physicians plays important role in the initial presentation since patient might see them first and needs early referral to otorhinolaryngologist. Surgical removal is indicated even though patient is asymptomatic initially as it may cause serious long term sequel.

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### **References:**

1. Djordjević V, et al Long term complications of ventilation tube insertion in children with otitis media with effusion. *Vojnosanit Pregl*; 2015; **72**(1): 40–43.
2. J.C. Groblewski, E.H. Harley Medial migration of tympanostomy tubes: An overlooked complication. *International Journal of Paediatrics Otorhinolaryngology*; 2006;**70**.1707-1714
3. Aren Bezdjian, Alexandra Maby, Sam J. Daniel To remove or not to remove: Review of cases of medial migration of tympanostomy tubes. *International Journal of Paediatric Otorhinolaryngology*; 2015;**79** :1793-1797
4. Zulkiflee S, Siti Sabzah MH, Philip R, Mohd Aminuddin MY Management of otitis media with effusion in children. *Malaysian Family Physician* 2013; **8**(2): 32-5
5. Petros V. et al Grommets in otitis media with effusion: the most frequent operation in children. But is it associated with significant complications. *Eur J Pediatr* 2007;**166**:385–391