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Recurrent aural myiasis: A palliative care through maxillofacial silicone prosthesis for mastoidectomy cavity: A case report

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Abstract
This paper presents a case of recurrent myiasis in mastoid defect secondary to post auricular abscess. This condition has been sporadically reported in the literature. However, complete redundancies have been noted on the management strategies. Maxillofacial prosthesis is considered as an alternative and supplement for surgical reconstruction. Hence, this article presents a unique, novel approach using to maxillofacial silicone prosthetic material for rehabilitation of the mastoid defect.

Keywords: impression, aural myiasis, mastoidectomy cavity, polyvinyl siloxane

Introduction

The word myiasis, is derived from the ancient Greek word 'myia' which means fly, is an infestation of the tissues and organs caused by fly (diptera) larvae [1]. Reason could be inability to maintain hygiene and/or open defect favoring germination of maggots [2, 3]. Prosthesis is an artificial replacement of the missing part and such prosthesis is also, aimed to enhance aesthetics and encourages overcoming psychological trauma. In this case report the prime objective of maxillofacial silicone prosthesis is to reestablish lost continuity caused by mastoidectomy cavity. This management approach addresses major deficiencies promptly at initial appointment and help to boost the future rehabilitation process significantly and effectively.

Clinical Report

A 40 year old otherwise healthy male reported to the department of ENT, World College of Medical Science and Research Hospital, Jhajjar, Haryana with complaints of blood stained discharge from a cavity behind the right ear with sudden onset of pain since 3 days, diminished hearing in both ears since childhood. There was a history of earache, pain and spontaneous discharge of pus from behind the right ear in childhood for which some surgical procedures was carried out. The patient mentioned that the right ear healed with a cavity behind it. There is a positive history of recurrent infestation of the cavity with larvae (maggots) twice in the past. There was no history of ear discharge from the affected ear in recent past, tinnitus, vertigo, facial muscle weakness etc. Social history revealed the patient belongs to low socio economic status, farmer by occupation.

On clinical examination, a large punched out, well epithelized cavity was seen in the right mastoid bone, midway between the root of the helix and the mastoid tip. (Figure 1) Its edges are undermined and dimensions were 15mmx10mm approximately. Suction cleaning of seromucinous fluid revealed a colony of maggots in depths. On further clinical examination of right ear, there was total perforation of the tympanic membrane and a large defect in the posterior wall of the external auditory canal. Left ear showed a large central perforation with active discharge. There was no other significant finding in ENT examination. Investigations advised were HRCT temporal bone, pure tone audiometry and routine blood tests. HRCT temporal bone showed a mastoidectomy cavity with absence of ossicular chain and posterior canal wall, no active disease noted, no sign of intracranial extension noted. (Figure 2) Pure tone audiometry showed bilateral severe mixed loss. Routine blood tests results were unremarkable.

Fig 1: Mastoidectomy cavity behind right auricle

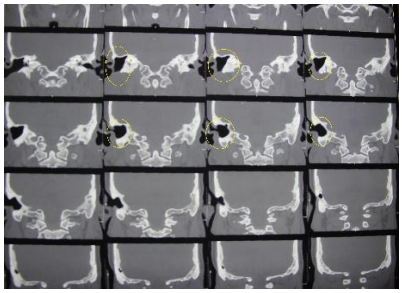

Fig 2: HRCT of mastoid region

Procedure

Treatment initiated with removal of larvae with forceps and gentle irrigation of the cavity with normal saline. The patient was started on prophylactic medications and followed up in OPD regularly. Patient became asymptomatic and mastoid cavity lining healed well. Need for exploration of the middle ear hence, excluded. For the next procedure, that included prosthetic closure of mastoidectomy cavity to defer the repeated infestation by larva, the patient was referred to the Department of Dentistry, World College of Medical Science and Research Hospital, Jhajjar, Haryana.

Prosthetic procedure

Prosthetic management includes the impression of right auricle along with mastoidectomy cavity without any premedication or anesthesia. The patient laid supine in dental chair with face turned left and chin down. Before initiating impression procedure, separating media in the form of petrolatum was applied on the edges of defect opening, auricle and involved hair line. The external audiotry meatus and the mastoidectomy cavity packed with gauze pieces (tied with dental floss for easy removal) before impression making. A custom made border using modeling plastic impression compound (DPI Pinnacle, Mumbai, India) adapted across auricle and mastoidectomy cavity to confine the impression material. Vinyl Polysiloxane regular body (Affinis, Coltene Whaledent Pvt. Ltd. Mumbai, India) constantly injected through automix gun to record the mastoidectomy cavity along with the right auricle. Vinyl polysiloxane elastomeric putty impression material (Affinis, Coltene Whaledent Pvt. Ltd. Mumbai, India) loaded adequately and wrapped all over around the impression material with loose ends wrapped towards the wall of modeling plastic impression compound. (Figure 3) High viscosity of vinyl polysiloxane elastomeric putty impression material did not permit leakage and kept the low viscous vinyl Polysiloxane regular body impression material within confines. Once set, the impression was removed in toto. The impression was evaluated for satisfactory coverage of the defect and the auricle (Figure 4) and was poured to obtain the master cast (Kalstone, Kalabhai, Karlson Pvt Ltd, Mumbai, India). Again master cast was duplicated to obtain working cast. On working cast a wire framework was adapted in the defect area leaving a U-shaped frame (holder and safety mechanism) extra to defect, using 21 gauge orthodontic wire. The silicone prosthesis was fabricated on the working cast with appropriately tinted silicone (RTV) using compression molding technique. The finished silicone prosthesis was inserted (Figure 4). A regular follow up was done after 24 hours, 1 week and monthly follow ups were scheduled. The patient was demonstrated about the use and the hygiene maintenance of silicone prosthesis. The patient was advised to use the prosthesis till surgical intervention. No untoward effect was noticed during follow up.

Fig 3: Polyvinyl Siloxane putty impression of mastoidectomy cavity and the right auricle

Fig 4: Prosthesis in situ

Discussion

Myiasis can be seen in various regions, skin, body cavities, and organs. Aural myiasis can manifest itself in various forms. Inability to maintain hygiene of a large defect with small opening may sometimes causes infestation with larva [1-3]. This case presents unhygienic mastoidectomy cavity with existing infestation with larva that warrant cleaning and closer of defect with immediate effort. Among various management strategies, maxillofacial prosthesis always considered as an alternative supplement for surgical reconstruction which aims to obturate the defect, enhance aesthetics and encourages overcoming psychological trauma. Maxillofacial silicone prosthesis helps in intimate, precise adaptation to accurately to close the mastoidectomy cavity. RTV maxillofacial silicone with compression molding technique was used to fabricate the prosthesis that required no laborious laboratory procedures, quick and easy removal of prosthesis can be achieved [4, 5]. Hence, this article presented initial prosthetic management by obturating the mastoidectomy cavity by flexible maxillofacial silicone prosthesis. Maxillofacial prosthesis boosts future rehabilitation procedure significantly by inducing a positive psychological impact on parent demeanour. This article presented a convenient procedure which overcome drawback of traditional materials and added advantages of new materials' flexibility for easy of placement extraorally, adaptability around undermined edges of defect, also maintain rigidity and delivering prosthesis with immediate effort.

Conclusion

This paper presents a unique case of mastoidectomy cavity with recurrent aural myiasis where a quick management was performed using a maxillofacial silicone prosthesis for closure of defect to inhibit the recurrence of aural myiasis.

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