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Endoscopic Management of Aural Myiasis: Experience of Two Decades

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Abstract

Background: The present study was undertaken to compare the efficacy of toendoscopic removal with conventional techniques in aural myiasis patients.

Methods: The 338, aural myiasis patients in study group were treated using Hopkine rigid toendoscope, the visible crawling caudal end of maggots was grasped with forceps & removed. Rests were identified from crawling movements or the visible caudal end buried in EAC and middle ear cavity and removed. Complete maggots clearance of ear cavity from EAC to middle ear cavity was done and same was repeated on other side if needed. Equal number of patients was treated using head light.

Results: The mean age in two groups was 55.5 years (range 02-68) in aural myiasis patients. There were 56.5% males and 43.5% females. Mean duration of aural symptom in both groups was 2 days. Endoscopically mean number of 42 maggots (range-10- 62) were removed in first sitting as compared to conventional technique where mean of 28 (range 10-48) maggots were removed ($p<0.001$). The mean duration of endoscopic treatment was 2days whereas in control group it was 6days. The difference was statistically significant ($p<0.001$).

Conclusion: Otoendoscopic procedure is superior to the conventional extraction method for removal of aural maggots. The larvae located in deep and inaccessible areas can be identified and removed easily. The disease was controlled in shorter time and ensures less damage to the middle ear structures.

Keywords: Aural Myiasis, Otoendoscope, Middle ear.

Abbreviations: CSOM: Chronic Otitis Media; ASOM: Acute Supurative Otitis Media; MRM: Modified Radical Mastoidectomy.

Introduction

Aural myiasis, a common otorhinolaryngological clinical entity in tropical counties is changing into rare because ofeconomic development and improved hygiene. It is an opportunistic parasitic infestation of human additionally as animals caused by house fly larvae (maggots). Aural myiasis involves infestation of external ear, middle ear or both. This can be classified as accidental, facultative (opportunistic) or obligate. There are many factors responsible for myiasis like low socioeconomic status, immune compromised state, mental retardation, neglected chronic otitis media (CSOM) and unhygienic living conditions. The misery is generally associated with trauma, wounds and ulcerative lesions of skin and mucosa. Although, myiasis is a self-limiting disease, however, if not treated it may lead onto fatal complications like intracranial penetration.

Aural myiasis is accidental aural infestation. Many species of dipterous flies among the genera chrysomyia have been reported to be the most important obligatory myiasis producers among human and animals The distribution of aural infestation is worldwide,, however, more prevalent in tropical and semitropical countries. Severity of myiasis depends on location of infestation, type of lesions and tissue inflammation. The maggots cause extensive necrosis, sloughing & destruction of intraaural tissue that reach to deep and inaccessible areas. In such a situation complete removal of maggots is difficult by manual extraction and several sittings may be required. To overcome this problem aural endoscope is being used for removal of maggots under direct vision. The maggots located in deep and inaccessible areas of middle ear can be approached

more easily by endoscopic procedure. The disease is controlled in shorter periods of time and in a fewer sittings, quick and complete eradication of myiasis is possible before the maggots cause irreparable damage to the external, middle ear and adjacent tissues. The study was conducted in aural myiasis patients to compare the efficacy of otoendoscopic with conventional removal techniques using head light.

Materials and Methods

The present prospective study was conducted in 338 consecutive patients of either sex in age group of 2 to 68 years suffering from aural myiasis during 2000- 2020 usually in months of August- October. The patients with aural myiasis presented with aural bleeding, earache, ear discharge, tinnitus, hearing loss, aural fullness, foreign body sensation and vertigo. There was history of habitual sleeping in streets in majority of cases. All patients were inquired domestic healthful conditions. Presence of predisposing conditions like acute supurative otitis media (ASOM), chronic supurative otitis media (CSOM), modified radical mastoidectomy (MRM) and aural malignancy was ascertained. In all patients otorhinolaryngological examination was done and otoscopic examination disclosed crawl live maggots on external meatus. Preoperatively routine investigations like Hb, BT, CT, Blood sugar, Blood urea, ECG, complete urine examination and X ray mastoid lateral view were carried out. Three to six hours fasting was ensured before endoscopy especially in cases where general anesthesia was required. Informed consent was obtained in writing. The patients were randomly assigned to two groups using a periodic random number. Group 1 patients were treated by otoendoscopic removal and group 2 by conventional method under head light.

In the study group 296 patients were operated under local anaesthesia after xylocaine sensitivity. Premedication with pentazocin 30 mg, promethazine 25 mg and atropine 0.4 mg intramuscular was given half an hour prior to operative procedure. External auditory canal was anaesthetized with cottonoids soaked in 4% Lignocaine for about 15-20 minutes. Forty two patients operated under general anaesthesia. Patient was made to lie down in supine position with operated ear tilted towards surgeon. External aspect of ear was cleaned & draped. Auricular area was in filtered with 2% xylocaine with adrenaline (1: 200000). Hopkins rigid otoendoscope was introduced and the larvae buried in necrotic material were identified with their crawling movements and removed one by one by grasping with Alligator's forceps. Complete clearance of external auditory canal and middle ear cavity was done. After 24 hours same procedure was repeated and clearance of maggots as well as necrotic material was performed.

Post operatively oral co- amoxiclav according to age & body weight in appropriate doses to prevent infections was given for10 days. Ear drops containing Prednisolone acetate 0.5%, Chloramphenical 5%, Glaccial acetic acid 3%, Benzocaine 3% and Benzyl alcohol 2% was instilled for two weeks. At the end of one week follow-up endoscopic examination was carried out and dead maggots if any were removed. The control group was treated with local instillation of turpentine oil and intermittently maggots were picked up manually under headlight from aural cavity with the help of Alligator forceps in 5-7 sittings. External auditory canal irrigated with normal saline and concomitant suction was performed in all patients. Post- operative treatment was similar to group 1.

Post operatively oral co- amoxiclav consistent with age & weight in acceptable doses to stop infections was given for 10 days. Ear drops containing anti-inflammatory drug acetate zero.5% Chloramphenical five-hitter, Glaccial carboxylic acid three-dimensional, local anesthetic three-dimensional and radical alcohol two was instilled for 2 weeks. At the tip of 1 week follow-up examination examination was administrated and dead maggots if any were removed. The management cluster was treated with native instillation of turpentine oil and intermittently maggots were picked up manually underneath headlamp from aural cavity with the assistance of Alligator extractor in 5-7 sittings. External meatus irrigated with traditional saline and concomitant suction was performed altogether patients. Post-operative treatment was just like cluster one.

Results

In study group the mean numbers of removed maggots was 42 (range-10- 62), whereas in conventional technique (Control group) it was 28 (range 10- 48) at first sitting. The mean duration

of endoscopic treatment was 2 days, whereas in control it was 6 days. The difference in mean values of two samples was statistically significant between treatment period (2 v/s 6 days) ($p<0.001$) and numbers of removed maggots (42 v/s 28) in first sitting ($p<0.001$).