

Audit

Best technique for Insect Removal (Scelodonta Stringicolis) at DGH Kilinochchi

Drahaman A. M. P., Krishnalingam R.

Key words

Otoacariasis, Flea Beetle

Introduction.

Removal of entrapped insects in the external auditory canal is a task very familiar to most ENT departments across the country. Although techniques for removal are quite standard, what we remove from the ear changes depending on the location within our country. In my personal experience before being appointed to the Northern province of Sri Lanka, we associated insect in the ear canal with dog ticks and mites however, the common flea beetle (*scelodonta stringicolis*) seems to be quite a popular culprit in the Kilinochchi district. As noted by Baskarathevan et al, ^[1] the flea beetle is an insect pest which is a threat to the grapevine cultivation in the northern province (Fig 2). Unlike the dog ticks which are ectoparasitic blood sucking arthropods ^[2], this insect does not attach itself to the tympanic membrane of the affected ear but can be found 'loose' within the ear canal. This characteristic I believe makes it easier for removal using simple syringing of the external ear canal as discussed below.

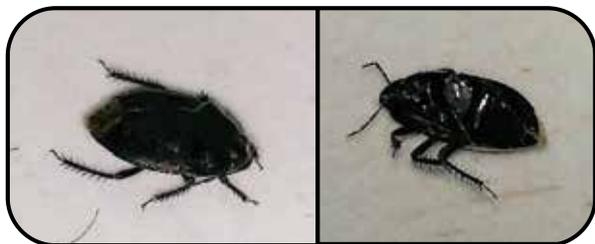


Fig 2

I present an audit of 23 consecutive patients who came to our clinic at DGH Kilinochchi with the complaint of 'insect in the ear' during the months of August and September 2017 and the methods we used to treat them.

Material and Methods.

Objectives

1. To ascertain the best way to remove flea beetles entrapped in the external auditory canal

Inclusion criteria

1. All patients who presented to our 'drop in' clinics and ETU of DGH Kilinochchi with the complaint of insect in the ear – Insect identified as common Flea Beetle.

Exclusion criteria

1. Patients were found to have foreign bodies and other type insects trapped in the external auditory canal.
2. Patients with pre-existing tympanic membrane perforations

All patients who qualified for the study were assessed by ENT medical officers and were initially treated with olive oil ear drops which were administered into the affected ear. About an hour afterwards the patient was then syringed using the standard technique of ear syringing. If this was unsuccessful after three attempts, examination under microscope (EUM) with suction and instrumentation was tried with the patient fully conscious. If the latter failed, examination under anaesthesia was carried out. The procedures were carried out by trained ENT staff.

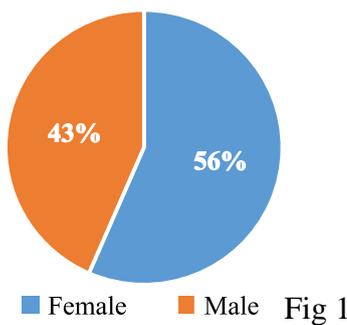
Post operatively the tympanic membrane of the affected ear was assessed for integrity and any signs of damage. A clinical hearing assessment

was also done. It was unfortunate that many of the patients who were treated did not come back to our clinic in two weeks' time for a repeat assessment. Follow up for these patients is still ongoing.

Success of the treatment was defined as complete removal of the insect with tympanic membrane being intact. All patients were given topical antifungal ear drops for one week after the procedure was completed.

Results.

The average age of our patients was around 15 years. 56.52% of which were female and 43.48% male.



According to the history the mean delay in presentation was less than one day. Of the 23 patients 60.87% were successfully treated by syringing, 34.78% by examination under anaesthesia (EUA) microscopy and instrumentation (EUM) and only 4.35% by EUM and instrumentation in the clinic. (Table 1)

Type of Procedure adopted	Success rate	P Value
Flea beetle removal - Syringing	60.87%	0.00221254
Flea beetle removal - EUA & EUM	34.78%	0.00000358
Flea beetle removal - EUM and microsuction	4.35%	0.00000000000001

Table 1

No traumatic tympanic membrane perforations were recorded during this audit period. No patients had clinically detectable hearing loss at the time of discharge from hospital. All 23 patients were successfully treated using either one of the treatment options.

Discussion.

There are many standard techniques to deal with entrapped insects in the external auditory canal. All techniques begin with a careful examination of the ear canal noting the tympanic membrane status, the type of insect and the relationship of the insect to the tympanic membrane.

Mayo clinic [3] advises that the patient's head be turned, affected ear upwards, and filled with mineral oil (olive oil) to 'float out' the insect. The contraindications for this method being presence of ventilation tubes or a perforated eardrum.

It is interesting to note that a majority of patients (60.87%) were successfully treated by simple syringing. It is hypothesised that the pre-administration of olive oil may have further facilitated the success of this technique. EUM and instrumentation in the clinic setting was only successful in 4.35% of patients (Who failed syringing). It can be hypothesised that in the event of a 'syringe' failure the next best treatment option would be microscopy and instrumentation under a general anaesthetic.

Certain authors have advocated use of 'otoendoscopy' in their treatment of this condition [4] it is the author's opinion that if a conventional ENT microscope is available in the theatre or clinic setting it should be used, as it provides 'more room' for manipulation and extraction of the insect.

Removal of insects from the external auditory canal whilst the patient is conscious requires skill, more experienced clinicians may still be able to have successful EUMs in the clinic before opting for a general anaesthetic. There is an obvious user variance to this regard. In our audit

most of the initial EUMs in the clinic were done by the ENT medical officer. This would probably explain why the clinic setting of EUM and instrumentation was not very successful. This will also be looked at during the next audit cycle. It is also noteworthy that pain and discomfort play a major role in patient cooperation during extraction of the insect. Decreased tolerance by the patient to instrumentation whilst conscious may also contribute to the decision of a general anaesthetic.

Unlike Otoacariasis caused by dog ticks and mites, flea beetles do not seem to be associated with sensorineural hearing loss and cranial nerve paralysis. Although there is very little literature regarding this particular insect, non-audited patients who presented to our hospital from the previous year (2016) have not manifested any serious complications. Further long-term follow-up and surveillance may be required in this regard and this is something we will be looking into during the next audit cycle.

Key Messages.

It is our recommendation that once the insect in the ear canal is identified as a flea beetle the following protocol would be most appropriate.

1. Administration of olive oil ear drops to the affected ear (tilted upwards)
2. Trial of syringing of the affected ear canal (successful in more than 60% of cases)
3. If the trial of syringing fails higher success rate can be achieved by removal of the insect under a general anaesthetic.

Drawbacks

1. Seasonal variation in presentation need to be assessed in order to formulate proper preventive strategies. This could not be done
2. Long-term follow-up for patients in order to screen for complications. This could not be done.

3. Entomological co-relation needs to be confirmed for further scientific study.

References.

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Competing interests

No competing interests.