

Foreign Bodies of the Ear and Nose- A Novel Technique of Removal

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Abstract:- There are numerous methods of removal of ENT foreign bodies described in literature. Use of irrigation, alligator forceps, right angle hook, wax loop/curette are the common techniques described for aural FB removal and curved hook, curette, alligator forceps, suction catheter and mother's kiss are used for nasal FB removal. Wire loop, Blunt right angle hook, Cerumen cures, Alligator forceps, Hartman's forceps, Curved hook, Jobson Horne probe, Nasal dressing forceps, Suction and catheters of various sizes, Irrigation equipment, Foley and Fogarty catheters as the recommended instruments used for the purpose.

We describe the use of universally available syringe and needle with tip bent as an instrument for aural and nasal FB removal.

By our novel technique using bent tip of syringe needle, most of the foreign bodies could be removed safely and efficiently. Out of total 139 aural FBs 92 (66.19%) could be removed using our technique. The most common aural FBs in our study like grain seed, plastic bead, eraser, stone and metallic objects were removed successfully in more than 90% of patients by our technique. Likewise 64.36% nasal foreign bodies were removed with our technique. Of the most common nasal FBs in our study i.e. plastic bead, grain seed and eraser more than 75% were removed by our technique.

Therefore we concluded that the use of syringe needle with proper precautions is a safe and efficient technique for aural and nasal FB removal. Especially in our Indian set up where most of the population live in rural areas with scarcely available well equipped medical centres and difficult or sometimes impossible specialist referral.

Keywords:- Foreign Body, Novel Technique of Removal, Bend Tip of Syringe Needle

I. INTRODUCTION

A foreign body (FB) is any object in a region it is not meant to be, where it can cause harm by its mere presence if immediate medical attention is not sought.[1] Patients with foreign bodies form a major chunk of the attendance in an ENT emergency. FBs can be introduced spontaneously or accidentally in both adults and children. Generally, FBs are more common in younger children; this may be due to various factors such as curiosity to explore orifices, imitation, boredom, playing, mental retardation, insanity, and attention deficit hyperactivity disorder, along with availability of the objects and absence of watchful caregivers.[2] FB may be classified as animate (living) and inanimate (non-living). The inanimate FBs can further be classified as organic or inorganic and hygroscopic (hydrophilic) or non-hygroscopic (hydrophobic).[3] There are numerous methods of removal of ENT foreign bodies described in literature. Early descriptions of foreign body removal from Roman times include "An insect must first be killed with vinegar and then removed with a probe; the patient should be encouraged to sneeze or better still he should be bound to a table with the affected ear downwards and the table struck with a hammer so that the foreign body may be shaken out of the ear".[4]

➤ Aims & Objectives:-

Our aim was to study the profile of patients with foreign bodies and suitable methods to remove them in a remote isolated area with scarce medical facilities.

II. METHODOLOGY

This prospective study was conducted in the department of ENT & HNS District Hospital Kargil for a period of two years from May 2017 to April 2019 and consisted of 240 patients presenting with Foreign Body ear and nose. In a remote and underdeveloped area like Kargil, with scarce medical facilities, patients with foreign bodies poses a lot of challenges. The population is scattered over a vast area with very difficult and somewhere non-existent road connectivity especially in the 4-5 months of winter. There is a district hospital where a single ENT Surgeon is available, and due to remote location and difficulty in transportation patients from the villages don't reach to the district hospital on time. In addition to lack of skilled personnel to deal with such patients there is lack of specialised equipment and instruments at the available

medical centres. In such places like Kargil it is important for the available medical personnel to be trained in dealing with emergencies like foreign body ear or nose using existing instruments customised for the same instead of doing nothing because of lack of specialised instruments.

Therefore we studied the suitability, efficiency and safety of one of the most common medical instrument i.e. a syringe and needle which are available at even the most basic medical aid centres, for use as a tool in removal of ear and nose foreign bodies. Also we trained paramedical staff from remote centres in safely removing FB using this technique and when to refer the patient without further intervention and delay.

III. THE TECHNIQUE

The tip of a needle of 2 or 3 ml syringe is bent at 90 degrees by vertically running the needle on a hard smooth surface with slight pressure. This gives a very fine right angled hook like instrument with very narrow shaft thus becoming a perfect instrument for aural and nasal FB removal. The child is kept with all limbs wrapped in a sheet on a parent's lap for removal of ear and nasal foreign bodies, or lying flat on a bed for ear foreign bodies. An assistant may be required to gently hold the child's head steady so there is no unexpected movement during instrumentation. Using direct visualization and illumination with a medical grade headlight or camping torch the bent tip of the needle is passed beyond the FB and engaged with the FB and with slight pressure withdrawn along with the FB.

S. No	Age Group	No of Pts.	Percentage (%)
1.	0-10 Yrs	147	61.25
2.	10-20 Yrs	34	14.17
3.	20-30 Yrs	9	3.75
4.	30-40 Yrs	7	2.92
5.	40-50 Yrs	8	3.33
6.	50-60 Yrs	17	7.08
7.	>60 Yrs	18	7.5
8.	Total	240	100

Table 1:- Age Wise Distribution

IV. RESULT

There were 138 (57.5%) male and 102 (42.5%) female patients. Most common age group was 0 to 10 years with 147(61.25%) patients followed by 10 to 20 years with 34(14.17%) and so on as depicted in table 1.

S. No	Type of FB	No of Pts.	%	Ear		Nose	
				No	%	No	%
1.	Grain seed	58	24.17	33	23.74	25	24.75
2.	Plastic bead	45	18.75	19	13.67	26	25.74
3.	Insect	34	14.17	32	23.02	2	1.98
4.	Eraser	27	11.25	10	7.19	17	16.83
5.	Stone	19	7.92	11	7.91	8	7.92
6.	Paper	17	7.08	7	5.03	10	9.90
7.	Cotton	16	6.67	9	6.47	7	6.93
8.	Metal	14	5.83	8	5.75	6	5.94
9.	Veg twig/Thorn	10	4.17	10	7.19	0	0
10.	Total	240	100	139	100	101	100

Table 2:- Type of Foreign Bodies

Most common foreign body in our study was grain seed with 58 (24.17%) patients followed by plastic bead with 45 (18.75%) patients, insects with 34 (14.17%) and so on as depicted in table 2. Most common aural foreign body was grain seed with 33 (23.74%) patients followed by insects with 32 (23.02%) patients, plastic bead with 19

(13.67%) patients and so on. Likewise plastic bead with 26 (25.74%) patients was the most common nasal foreign body followed by grain seed with 25 (24.75%) patients, eraser with 17 (16.83%) patients and so on.

The most important observation in our study i.e. the technique of removal is depicted in table 3. All the foreign bodies were removed in minor OT and in some cases sedation and topical anaesthesia was used. By our novel technique using bent tip of syringe needle most of the foreign bodies could be removed safely and efficiently. Out of total 139 aural FBs 92 (66.19%) could be removed using

our technique. The most common aural FBs in our study like grain seed, plastic bead, eraser, stone and metallic objects were removed successfully in more than 90% of patients by our technique. Likewise 64.36% nasal foreign bodies were removed with our technique. Of the most common nasal FBs in our study i.e. plastic bead, grain seed and eraser more than 75% were removed by our technique.

S. No.	Type of FB	Ear					Nose				
		Total	Bent tip of syringe	Forceps	Syringing	Hook	Total	Bent tip of syringe	Forceps	Hook	Syringing
1.	Grain seed	33	33	0	0	0	25	20	0	5	0
2.	Plastic bead	19	15	0	1	3	26	18	0	8	0
3.	Insect	32	12	15	3	2	2	0	2	0	0
4.	Eraser	10	10	0	0	0	17	14	1	2	0
5.	Stone	11	7	2	0	2	8	3	0	5	0
6.	Paper	7	3	4	0	0	10	4	5	1	0
7.	Cotton	9	3	6	0	0	7	2	5	0	0
8.	Metal	8	5	0	2	1	6	4	0	2	0
9.	Veg twig/Thorn	10	4	6	0	0	0	0	0	0	0
10.	Total	139	92	33	6	8	101	65	13	23	0

Table 3:- Technique of Removal

V. DISCUSSION

In our study there were 138 (57.5%) male and 102 (42.5%) female patients. Ramesh Parajuli also found a male preponderance in their study in which out of 134 patients 94 were males and 40 were females.[5] In Rishi Bhatta et al study 211 cases recorded, out of which 118 were male and 93 female.[6] This male preponderance may be due to the male child being more mischievous and inquisitive than their female counterpart. Most common age group was 0 to 10 years with 147(61.25%) patients followed by 10 to 20 years with 34(14.17%). In Taiwo Olugbemiga Adedeji study almost two-third (62.3%) of the affected patients were children with ages 10 years and below and the prevalence was disproportionately high (46.4%) in children under the age of 5 years.[7] Other studies reported similar findings. [8,9,10,11] Children are very inquisitive and tries to explore thus they tend to insert whatever they can grasp into their own or their fellows' nose, ear or mouth. Therefore parents and caregivers must try to keep such small objects away from reach of young children.

Most common foreign body in our study was grain seed with 58 (24.17%) patients followed by plastic bead with 45 (18.75%) patients, insects with 34 (14.17%) and so on. Most common aural foreign body was grain seed with 33 (23.74%) patients followed by insects with 32 (23.02%) patients, plastic bead with 19 (13.67%) patients. Likewise plastic bead with 26 (25.74%) patients was the most

common nasal foreign body followed by grain seed with 25 (24.75%) patients, eraser with 17 (16.83%) patients. Grain seed and insects being common FBs in our study may be due to the population in this area being mostly agriculture dependent with parents especially mothers along with their children spending majority of their time in agri-fields. Plastic beads are worn as ornaments by women and also are found commonly in toys thus making it very accessible for small children to lodge in their ears and nose. Taiwo Olugbemiga Adedeji et al also found seeds (corns/beans/rice husk) as the most common foreign body totalling 47 (19.67%) in their study.[7] In the Ramesh Parajuli study common ear FBs included cotton wool, bean, bead, paper/plastic, eraser, insect, paddy seed, and popcorn kernel and common nasal FBs included hygroscopic FB such as bean, peanut, corn, and grams, nonhygroscopic FB such as eraser, paper, sponge, and plastic and metallic objects.[5] Several other studies noted common ear FBs as beads, small plastic toys, cotton fragments, stones and popcorn kernels. Common nasal FBs included grain seeds, balls, beads and parts of toys.[12,13,14]

By our novel technique using bent tip of syringe needle, most of the foreign bodies could be removed safely and efficiently. Out of total 139 aural FBs 92 (66.19%) could be removed using our technique. The most common aural FBs in our study like grain seed, plastic bead, eraser, stone and metallic objects were removed successfully in more than 90% of patients by our technique. Likewise

64.36% nasal foreign bodies were removed with our technique. Of the most common nasal FBs in our study i.e. plastic bead, grain seed and eraser more than 75% were removed by our technique. P H Davies, J R Benger in their article lists use of irrigation, positive pressure, negative pressure, glue, catheter techniques, impression materials, surgical instruments and manufactured instruments as the common techniques of removal of aural & nasal FBs described in literature. Further they lists Wire loop, Blunt right angle hook, Cerumen curettes, Alligator forceps, Hartman's forceps, Curved hook, Jobson Horne probe, Nasal dressing forceps, Suction and catheters of various sizes, Irrigation equipment, Foley and Fogarty catheters as the recommended instruments used for the purpose.[15] Our technique of using the ubiquitous syringe needle as an instrument in FB removal has never been before described in literature. Although this technique is based on the already described method of using a right angled hook, still the availability of syringe at even the least equipped medical centre especially in rural areas makes the use of the technique a very useful one.

Sarah Grigg, Cameron Grigg reviewed use of irrigation, alligator forceps, right angle hook, wax loop/curette for aural FB removal depending on the type of FB and use of curved hook, curette, alligator forceps, suction catheter and mother's kiss for nasal FB removal. Further they listed the conditions needing specialist referral, like button battery foreign bodies, occlusive aural foreign bodies, previous unsuccessful attempts at removal, concurrent infection (eg otitis externa, sinusitis), the patient is likely to need sedation.[16]

In addition to teaching removal of FB ear and nose using our technique the field staff were also made aware of the situations needing specialist ENT referral without further delay.

VI. CONCLUSION

From this study we conclude that the use of syringe needle with proper precautions is a safe and efficient technique for aural and nasal FB removal. Especially in our Indian set up where most of the population live in rural areas with scarcely available well equipped medical centres and difficult or sometimes impossible specialist referral, already existing medical staff can be trained for FB removal using this technique thus minimising the complications from delayed intervention.

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ACKNOWLEDGEMENTS

- **Financial support:** None
- **Conflict of interest:** None