

Ear, Nose and Throat Foreign bodies in Royal Irrigation Hospital : a Review of the Past Five Years

Kotchporn Wongsuwan, MD.

*Department of Otolaryngology, Panyanantaphikkhu Chonprathan
Medical Center, Srinakharinwirot University. Bangkok, Thailand*

วัตถุประสงค์ : เพื่อรวบรวมข้อมูลเกี่ยวกับสิ่งแปลกปลอมในหูคอจมูกและเทคนิคการนำสิ่งแปลกปลอมออก รวมทั้งภาวะแทรกซ้อน

วิธีศึกษา : ผู้ป่วยที่มีสิ่งแปลกปลอม ในหู, จมูก, และลำคอระหว่างปี 2549 ถึง 2554 ทั้งหมด 274 คน รายละเอียดประกอบด้วย อายุ, เพศ, อาการนำ, ระยะเวลา, ประเภทของสิ่งแปลกปลอม, การส่งตรวจ, ภาวะแทรกซ้อนและอัตราพบสิ่งแปลกปลอมซ้ำ วิเคราะห์ข้อมูลโดยใช้สถิติ เชิงพรรณนา

ผลการศึกษา : สิ่งแปลกปลอมในหูเป็นตำแหน่งที่พบมากที่สุด รองลงมาคือสิ่งแปลกปลอมในลำคอและจมูก สิ่งแปลกปลอมในหูที่พบบ่อยที่สุดคือ แมลง โดยผู้ป่วยส่วนใหญ่มาด้วยประวัติเห็นว่ามียสิ่งแปลกปลอมเข้าไปในหู มาพบแพทย์ในสัปดาห์แรก ร้อยละ 92.9 สามารถนำออกที่คลินิกตรวจ สิ่งแปลกปลอมในช่องคอที่พบมากที่สุดคือก้างปลา โดยผู้ป่วยมาด้วยอาการกลืนเจ็บหนักพบแพทย์ภายในวันแรก โดยร้อยละ 94.3 สามารถนำสิ่งแปลกปลอมออกได้ที่คลินิก ในส่วนสิ่งแปลกปลอมในจมูกพบว่าลูกพลาสติกเป็นสิ่งแปลกปลอมที่พบบ่อยที่สุด อาการนำคือผู้ป่วยบ่นว่าผู้ป่วยนำสิ่งแปลกปลอมเข้าไปในจมูก โดยมักจะมีอาการน้อยกว่าสัปดาห์, ร้อยละ 75.9 สามารถนำออกได้ที่คลินิก อัตราการพบสิ่งแปลกปลอมซ้ำในหูจมูกและลำคอเป็นร้อยละ 6.4, 10.3 และ 2.9 ตามลำดับ ภาวะแทรกซ้อนขึ้นกับประเภท ของสิ่งแปลกปลอม, ระยะเวลาที่มีสิ่งแปลกปลอมในร่างกาย และทักษะของแพทย์

สรุป : สิ่งแปลกปลอมในหูคอจมูก พบได้บ่อย การวินิจฉัยและการรักษาที่เหมาะสมมีความจำเป็น เพื่อหลีกเลี่ยงภาวะแทรกซ้อน แพทย์จำเป็นต้องให้คำแนะนำสำหรับการป้องกันการใส่สิ่งแปลกปลอมซ้ำ

Key words : *Foreign body, ear, nose, throat, repeated episode*

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Introduction

Ear, nose and throat FB are common conditions in general practice and otolaryngology. In this condition, patient is more suffering if no correctly diagnosis and treatment is performed. The most common FB tends to change according to social conditions of each community. To know basic information about commonly found FB is helpful to prepare proper instrument for the removal treatment. This study analyzed the medical records of patient who presented with FB in ear, nose and throat over a 5-year period, to determine how these patients should be managed and for recurrent precaution.

Material and methods

A retrospective study of the patients with FB in ear, nostril, pharynx, esophagus, who present at Royal Irrigation Hospital since June 1st, 2006 to June 30th, 2011. The study was approved by the institutional review board. The information was obtained from outpatient and inpatient medical records, including age, sex of the patients, chief complaints, duration, type of FB, type of removal treatments, complications, first visits and discharges, and recurrent rate. Patients were excluded from the study if no FB was found. The descriptive statistics were analyzed by using SPSS version 11.5.

Results

Two hundred and seventy four patients were included in the study. One hundred and forty

patients had FB in the ear, twenty nine patients had FB in the nose and one hundred and five had FB in the throat.

Table 1 Demographic data of the patients

Ages (years)	FB in ear Frequency (percent)	FB in nose Frequency (percent)	FB in throat Frequency (percent)
0.1-9	54 (38.6)	28 (96.6)	6 (5.7)
9.1-19	22 (15.7)	1 (3.4)	10 (9.5)
19.1-29	10 (7.1)	0 (0)	17 (16.2)
29.1-39	13 (9.3)	0 (0)	20 (19)
39.1-49	18 (12.9)	0 (0)	19 (18.1)
49.1-59	9 (6.4)	0 (0)	16 (15.2)
59.1-69	14 (10.0)	0 (0)	16 (15.2)
69.1-79	0 (0)	0 (0)	0 (0)
79.1-89	0 (0)	0 (0)	1 (1.0)
Total	140 (100.0)	29 (100)	105 (100.0)
Sex ratio	1:1 (M:F)	1.6:1 (M: F)	1:2 (M:F)

Table 2 Presenting symptoms of patients

Symptoms	Frequency	Percent
Ear FB		
Witness insertion into the ear	93	66.4
Earache with otorhea	26	18.6
Dullness	21	15.0
Total	140	100.0
Nose FB		
Witness insertion into the nose	23	79.3
Chronic rhinorhea	5	17.24
Nasal pain	1	3.46
Total	29	100.0
Throat FB		
Odynophagia	100	95.2
Dysphagia	3	2.9
Throat irritation	1	1.0
Witness of swallowing	1	1.0
Total	105	100.0

Table 3 Duration of symptoms in patients with ear FB

Duration of insertion (wk)	Frequency	Percent
< 1	120	85.7
1 - 2	3	2.1
2 - 3	6	4.3
> 3	11	7.9
Total	140	100.0

Table 4 Duration of symptoms in patients with nasal FB

Duration of symptom (wk)	Frequency	Percent
< 1	23	79.3
1 - 2	1	3.4
> 2	5	27.2
Total	29	100.0

Table 5 Duration of symptoms in patients with throat FB

Duration of symptoms (d)	Frequency	Percent
< 1	64	61
1 - 2	16	15.2
2 - 3	11	10.5
3 - 4	7	6.7
4 - 5	1	1.0
> 5	6	5.6
Total	105	100.0

Table 6 Locations of Throat FB

Location of FB	Frequency	Percent
Tonsil	64	61.0
Base of tongue	20	19.0
Valleculae	9	8.6
Pyramiform	3	2.9
Gum	3	2.9
Posterior pharyngeal wall	3	2.9
Upper esophageal sphincter (UES)	1	1
Esophagus	2	1.9
Total	105	100.0

Table 7 Type of FB of ear, nose and throat FB

Foreign body	Frequency	Percent
Ear FB		
Insect	41	29.3
Seed	4	2.9
Rubber	2	1.4
Cotton	29	20.7
Plastic ball	13	9.3
Crayon	5	3.6
Button battery	2	1.4
Hair	10	7.1
Plasticine	1	0.7
Earring	7	5.0
Shell	1	0.7
Piece of stick	1	0.7
Piece of metal	1	0.7
Piece of paper	1	0.7
Foam	1	0.7
Feather	1	0.7
Not applicable	20	14.29
Total	140	100.0
Nasal FB		
Rubber band	1	3.4
Cotton	3	10.3

Foreign body	Frequency	Percent
Plastic ball	5	17.2
Button battery	4	13.8
Earring	1	3.4
Plasticine	1	3.4
Piece of paper	1	3.4
Foam	2	6.9
Rock	1	3.4
Seed	3	10.3
Lizard egg	1	3.4
Rhinolith	1	3.4
Not applicable	5	17.2
Total	29	100.0
Throat FB		
Fish bone	93	88.6
Grass hopper legs	2	1.9
Squid tentacle	1	1
Shrimp shell	1	1
Crab shell	2	1.9
Seed	2	1.9
Not applicable	4	3.8
Total	105	100.0

Figure 1 Complications of ear nose and throat FB

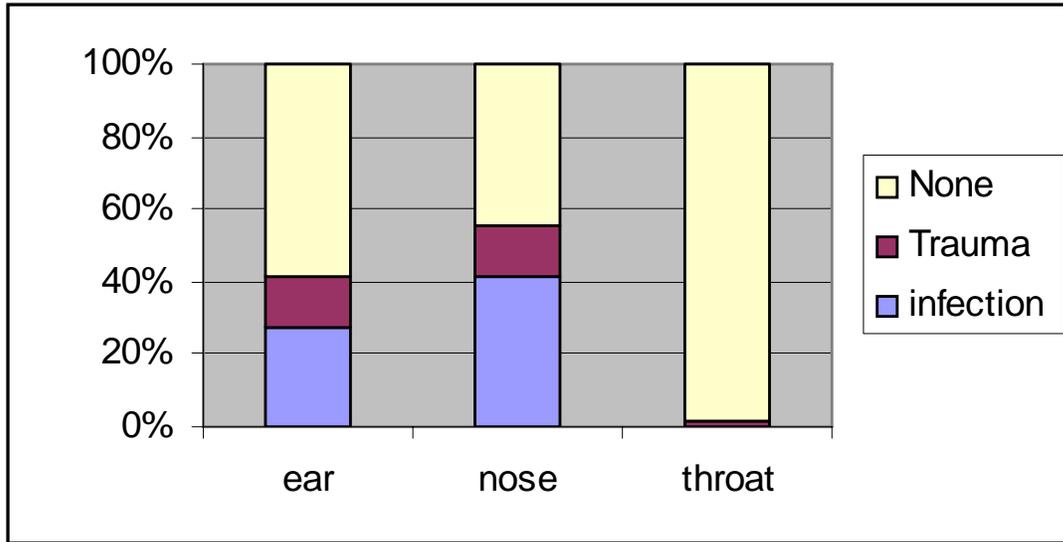


Table 8 Treatments of ear, nose and throat FB

Treatment	FB in ear Frequency(percent)	FB in nose Frequency (percent)	FB in throat Frequency (percent)
Remove in OPD	130 (92.9)	22 (75.9)	99 (94.3)
Remove in OR	10 (7.1)	7 (24.1)	6 (5.7)
Total	140 (100.0)	29 (100.0)	105 (100.0)

Table 9 Repeated episodes of ear, nose and throat FB

Foreign body	FB in ear Frequency (percent)	FB in nose Frequency (percent)	FB in throat Frequency (percent)
Single	131 (93.6 %)	26 (89.7 %)	102 (97.1 %)
Repeated	9 (6.4 %)	3 (10.3 %)	3 (2.9 %)
Total	140 (100 %)	29 (100.0 %)	105 (100.0 %)

Table 10 Visiting status

clinic visit	FB in ear		FB in nose		FB in throat	
	First encounter	Discharge	First encounter	Discharge	First encounter	Discharge
ER	29 (20.7 %)	0 (0.0 %)	8 (27.6 %)	0 (0.0 %)	21 (20 %)	4 (3.8 %)
OPD GP	11 (7.9 %)	4 (2.9 %)	6 (20.7 %)	0 (0.0 %)	11 (10.5 %)	3 (2.9 %)
OPD ENT	95 (67.9 %)	132 (94.3 %)	15 (51.7 %)	29 (100 %)	73 (69.5 %)	98 (93.3 %)
OPD Ped.	5 (3.6 %)	4 (2.9 %)	0 (0 %)	0 (0 %)	0 (0 %)	0 (0 %)
Total	140 (100 %)	140 (100 %)	29 (100 %)	29 (100 %)	105 (100.0 %)	105 (100.0 %)

1. Foreign bodies in the ear

The ages ranged from 7 months to 79 years (mean 26.2 ± 22.4 years). (Table 1) The patient with ear FB, 50.7 % were male, and 49.3 % were female. Most patients were younger than 9.1 years (38.6 %). A clear history of FB insertion into the ear was the most common presenting symptom in 93 patients (66.4 %) followed with earache with otorrhea in 26 patients (18.6 %). (Table 2) The duration of symptom is mostly less than a week (85.7 %). (Table 3) Insects with 41 (29.3 %) cases were the most common FB in the ear, followed by the cottons 29 (20.7 %) as in (Table 7). No investigation was performed other than physical examination. Only 10 (7.1 %) patients with ear FB were removed in operating room (OR), other 130 (92.9 %) were successfully removed at an out patient clinic, with and without local anesthesia. (Table 8) Ninety five patients (67.9 %) visited ENT clinic at first place, others visited at emergency room (ER), general clinic (GP), and pediatric clinic respectively. Only 8 patients (5.7 %) were successfully removed FB in the ear at other clinic than ENT clinic. (Table 10) The major complications were including otitis external in 38 cases (27.1 %), trauma of external ear (EAC) and middle ear (ME) in 20 cases (14.3 %) (Figure 1) Nine patients (6.4 %) with ear FB had repeated episode of foreign body insertion, and 8 of them (88.9 %) had the same location as previous while 11.1 % was in nostril. (Table 9)

2. Foreign bodies in the nose

The ages ranged from 1.56 to 14 years old (mean 4.3 ± 2.9 years). There were 18 males (62.1 %) and 11 females (37.9 %). (Table 1) In most of cases (79.3 %), the children were seen of insertion foreign body into the nose, followed by chronic rhinorrhea in 5 patients (17.24 %). (Table 2) Most patients (79.3 %) had the symptom less than a week and 5 patients (27.2 %) had the symptom more than two

weeks. (Table 4) Plastic balls represent the most common offender in the nasal FB (17.2 %) followed by button batteries (13.8 %), seeds and cottons (10.3 %). (Table 7) In nasal FB 14 patients (48.3 %) were referred to ENT clinic. None of nasal FB patient was removed at ER or GP clinic (Table 10). No any investigation was performed. Seven of patients (24.1 %) were removed FB under general anesthesia in OR (Table 8). The most common complication was rhinitis (41.4 %) (Figure 1). Three patients with nasal FB (10.3 %) had previous history of FB in nostril. (Table 4)

3. Foreign bodies in the throat

One hundred and seventy one were diagnosed with FB in the throat (including, FB in mouth, FB in pharynx, FB in esophagus), but only 105 cases (61.4 %) were found and treated FB, so other 66 patients who were not found FB were excluded from the study. The ages ranged from 6 to 83 years old (mean 40.46 ± 18.1 years). There were 35 males (33.3 %) and 70 females (66.7 %). The most frequent presenting symptoms were sudden odynophagia (95.2 %) followed by dysphagia (2.9 %), throat irritation (1 %) and witness of swallowing FB (1 %) respectively. (Table 2) A duration of symptom was quite vary from half and hour to a month. Most of patients with FB in the throat had symptoms not more than a day (61 %) and in descending order. (Table 5) Tonsil was found to be the most common location of FB (61 %), followed by base of tongue (19 %) and valleculae (8.6 %) respectively. (Table 6) Fish bones were the most commonly found FB in the throat (88.6 %). (Table 7) Six patients (5.7 %) were including 2 fish bones at pyriform sinus, 2 at upper esophageal sphincter (UES) and 2 patients with seed in distal esophagus were removed in OR under general anesthesia. Only two patients (1.9 %) had complication from the treatment. (Figure 1) Thirty

two patients (30.5 %) visited at ER and GP while the rest (69.5 %) came to ENT clinic at the first place. Seven patients (6.7 %) were successfully treated by none ENT specialty. (Table 10) The repeated episodes were in 3 cases (2.9 %) and they were in a nostril, a tonsil and an ear equally. (Table 9)

Discussion

In this study, ear FB (51.1 %) was the most commonly seen and managed. It was followed by the throat (38.3 %) and nose (10.6 %). A study by Endican, et al.³ shows quite different to this study, the ear was the most common located of FB, the nasal FB was the second most common location and followed by pharynx, esophagus and tracheobronchial tree. Because of the difference in the aging of population of the studies. The highest incidence of ear FB in this study was 0.1-9 years old (38.6 %). In this age group children tend to active to explore the world and emulate their colleague. Endican and Das et al.^{3,14} reported a higher incidence in the age 0-6 and 2-4 years old. The incident of male and female in this study was about the same. The patients usually came with the witness of insertion the FB in to the ear (66.4 %) within less than a week (85.7 %). Insects were the most common FB in the ear (29.3 %) and followed by cottons (20.7 %). From this study only 17.8 % of ear FB were removed by non ENT specialists, because most patients were children which need more experience to handle these group and removal the ear FB needs proper instruments¹³. A study by Mackle, et al.⁸ in Ireland reported that the success rate of treatment in children with ear FB in accident and emergency department by physician at ER was 7 %. While Iseh, et al.⁴ reported 79.8 % of ear FB were removed by none ENT specialist.

The successful of removing ear FB depends on the size, shape, and texture of the FB; the cooperation of the patients; an ability to visualize the FB and surrounding structures; trauma to the ear from insertion or attempted removals of the FB; the equipments available for removal; and skill of the individual attempting the removal¹³. Most patients were removed FB at OPD with or without local anesthesia (92.9 %), 7.1% was removed at OR under general anesthesia. The removal techniques at OPD ENT including direct visualization with otoscopy or otomicroscopy, using alligator forceps or suction. Whereas operative removal was performed under otomicroscopy with variety instrument such as alligator forceps, suction, curette, and right angle ball hook. Live insects were suffocated with any bland oil and syringed out or remove with forceps or suction. Vegetative FB must not be irrigated otherwise it will expand and cause more discomfort. The complications follow the ear FB removals including otitis externa (27.1 %) and traumatic EAC and ME (14.3 %) which due to the shape of FB, duration of lodgments, viability which results in a more inflammatory response, the cooperation of the patient, and experience of the physician. The repeated insertion rate of ear FB in this study was 6.4 % and 88.9 % of them presented at the same location as previous. In this study, there were 2 button batteries, one was removed under general anesthesia due to the child was not cooperate. The other was removed at OPD ENT, the patient was 33 years old with schizophrenia and he was well cooperate. Excoriation of external auditory canal, and discharge were noted in both cases. In the literature review of battery insertion in the ear reported the serious complication such as necrosis of the skin and bone of the external auditory canal, tympanic membrane perforation, ossicular chain destruction and facial palsy due

to injury of facial nerve^{2,6,7,9,15}. This type of FB, immediate management should be concerned without waiting for NPO time. In throat FB, the highest incident was between 30 and 39 years and more predominance in female 2:1 (F: M). The majority of them present with odynophagia (95.2 %) just like in the study of Atchariyasathian V, et al.¹ In this study fish bone was the most common throat FB (88.6 %). This has been the most common finding in most studies on pharyngeal FB^{1,3,5,11}. It was removed in OPD mostly (94.3 %) either by using headlight or with flexible endoscope connected with closed circuit television. Only 5.7 % of throat FB was removed in OR under general anesthesia via direct laryngoscope or rigid esophagoscope. In the study of Endican, et al.³ reported 80.8 % of pharyngeal FB were removed at the clinic and 19.2 % were removed in the operation theatre under general anesthesia. Throat FB placed at tonsil mostly followed by base of tongue, Tiago RS, et al.¹⁶ noted tonsils were mostly found FB in oropharynx, probably due to tonsillary crypts that favor food retention. In this study, only 21.9 % of patients who came to none ENT clinic (including ER, OPD GP) were successful remove FB. In this study, the complication from remove FB was trauma (1.9 %). The recurrent rate was 2.9 % which was about the same in the report of William, et al.¹⁷ in recurrent rate of FB ingestion is 2.7 %.

For nasal FB, the highest incident was between 1 and 14 years and more slightly high in male 1.6:1 (M:F). The study of Mukherjee, et al.¹⁰ showed male preponderance (59.72 %) in the case of FB in ear, nose and throat and predominance of 0-5 years. Most of patients in this study came with an observation of insertion FB into the nose (79.3 %) and followed by chronic rhinorhea in 17.24 % while Mackle, et al.⁸ reported 10 % of nasal FB were discovered incidentally following the development

of foul smelling nasal discharge. Seventy nine percent of patients came to hospital within a week whereas 80 % of nasal FB reported in Mackle, et al.⁸ came to the hospital in the same day and 8 % presented the following day, and 2 % waited several days before seeking treatment. The plastic balls, which is used in gun toy, was the most common FB in nasal cavity. The type of FB depended on the cultural society, Mackle, et al.⁸ reported beads was the most common nasal FB while Endican, et al.³ reported foams as the most common nasal FB. The entire patients with nasal FB was treated by ENT doctor, which was quite different from the study of Mackle, et al.⁸ reported 65% of nasal FB was successful remove by ER doctors. Ngo, et al.¹² reported 50.1 % of ear, nose and throat FB in children were successful removed by emergency doctors. The success key factors of removal nasal FB including type and shape of FB, if the parents can inform more specific about the FB which will lead to proper preparation of the instrument for removal, time of lodgment which will lead to more inflammation and profuse nasal discharge, proper instruments, co-operation of patients and a skill of physicians. A button battery in the nose has been shown to cause septal perforation after as short as 7 hr6. In this study button batteries in 4 cases were removed under GA and examined for complications. None of them were reported of systemic toxicity. Repeat nasal FB insertion was found in 10.3 % and all of them were in the same location. In the study of Mukherjee, et al.¹⁰, the children in Kolkato, India, found the repetition in 22.2 % of FB in ear, nose and throat and more in case of intrusion of FB into the nose.

The limitation of this study was incomplete information of records, which is a nature of the retrospective study. Future, prospective studies on FB in ear, nose and throat should be conducted for more information about technique

removal FB in clinic and operating room, specific complications and treatments, the predictive factors of positive finding in ear, nose and throat FB, and in the recurrent case socio-demographic correlation and ingenuity of the patients should be concerned.

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