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Original article

Nasal foreign bodies: Results of a study of 260 cases

M. Abou-Elfadl*, A. Horra , R.-L. Abada , M. Mahtar , M. Roubal , F. Kadiri

Service d'ORL et de chirurgie cervico-faciale, hôpital 20-Août, CHU Ibn Rochd, 6, rue Lahssen Elaarjoun, Casablanca, Morocco

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ABSTRACT

Aims: Insertion of a foreign body in the nasal cavity is a very common incident in children. It is easily diagnosed, but the type of foreign body varies and extraction can sometimes be difficult, with risk of complications. The present study reports nasal foreign bodies seen in emergency in our ENT department, with an update on the state of knowledge.
Materials and methods: A prospective study between May and August 2011 included all patients admitted to the ENT emergency unit for nasal foreign body. Data comprised age, gender, circumstances of discovery, symptoms, type of foreign body, extraction method and complications.
Results: Two hundred and sixty cases of nasal foreign body were included, representing 4.3% of all consultations in the unit. Mean age was 3 years (range: 1–16 years); the sex ratio was 1.4 (male predominance). The incident was reported by a family member or the actual child in 76.9% of cases ($n = 199$), or discovered following nasal symptoms in 23.1% ($n = 61$). The main types of foreign body were non-organic synthetic beads in 18.8% of cases and vegetable forms in 17.7%. Extraction was easy, using forceps, micro-hooks or suction, in 91.53% of cases. Complications comprised infection ($n = 48$), epistaxis ($n = 18$) and nasal septum perforation ($n = 1$).
Conclusion: Nasal foreign bodies are a frequent accident in medical practice, especially in young children. They are generally harmless, but may incur complications if overlooked or when a button cell is involved, whence the importance of timely extraction. The best treatment, however, remains prevention.

1. Introduction

Nasal foreign bodies are frequently encountered, especially in children. The circumstances are usually accidental, with a foreign body trapped or incarcerated in one or both nasal cavities by the anterior (vestibular) or more rarely posterior (choanal) route [1].

Positive diagnosis is often easy, but may be delayed by the context, type of foreign body or non-specificity of the symptomatology. Early diagnosis can avoid potentially serious complications related to the nature of the foreign body itself or to chronicization of the resultant irritation, with a real risk of superinfection.

The present study reports epidemiological, clinical and therapeutic aspects of nasal foreign bodies in a series of 26 cases.

2. Materials and methods

A prospective study performed between May and August 2011 in the ENT emergency unit of the 20-Août Hospital in Casablanca (Morocco) included 260 nasal foreign body patients, admitted throughout the day and night and receiving immediate treatment.

Study variables comprised age, gender, particular context, circumstances of discovery, symptoms, type of foreign body, means of extraction and any complications.

3. Results

Six thousand and forty-five patients consulted in the ENT emergency unit during the 4-month study period, including 780 cases of ENT foreign body, located in the nasal fossae (260), ear (313) or esophagus (207). Nasal foreign bodies accounted or 4.3% of consultations and for 33.3% of ENT foreign bodies. Table 1 presents the distribution of ENT foreign bodies for the period May–August 2011.

Median age was 3 years (range: 12 months to 16 years; mean: 3 years). Fig. 1 shows distribution by age group.

The sex ratio was 1.4: 58.8% male and 41.2% female.

The incident was reported by a family member or the actual child in 76.9% of cases ($n = 199$), and or discovered following nasal symptoms in 23.1% ($n = 61$).

Most of the children (74.6%, $n = 194$) were asymptomatic at admission. In the other cases, symptoms comprised purulent

* Corresponding author.
E-mail address: dr_abouelfadl_m@hotmail.fr (M. Abou-Elfadl).

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Table 1
Distribution of foreign bodies in the ENT region (May–August 2011).

Type of foreign body	Number	Percentage of total number of foreign bodies	Percentage of total number of consultations
Nasal cavities	**260**	**33.33**	**4.3**
Ear	313	40.12	5.17
Esophagus	207	26.58	3.42
Total	780	100	100 (6045)

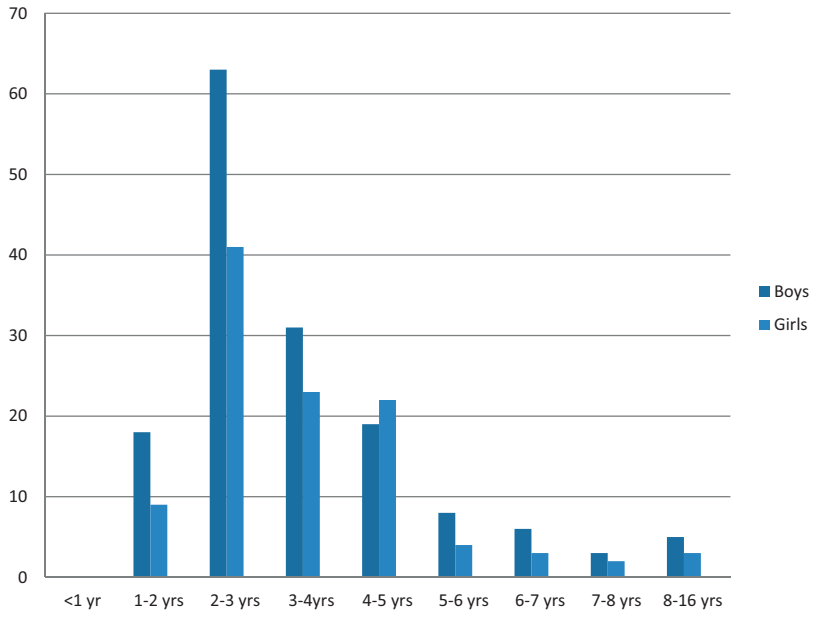

Fig. 1. Number of cases according to age and gender.

rhinorrhea associated with unpleasant nasal odor in 18.46% of cases ($n = 48$) and epistaxis in 6.9% ($n = 18$).

There was 1 case of Down's syndrome, in a 16-year-old child, but no cases of mental retardation.

Examination locates the foreign body, which can be identified by pushing the tip of the nose back with a finger; otherwise, effective anterior rhinoscopy can be performed using an otoscope.

The foreign body is usually found in the antero-inferior part of the cavity, trapped by the inferior turbinate. More rarely, it may be found more posteriorly or superiorly, pushed back by previous attempts at extraction.

In 5 cases, foreign bodies of the same type were found in both nasal cavities; there was 1 case of nasal and auricular foreign bodies.

The present series predominantly involved non-organic foreign bodies (beads in 18.8% of cases) and vegetable types. Button cells, which are especially toxic, were implicated in 0.76% of cases.

Table 2 shows distribution by type.

Nasopharyngeal X-ray was performed in 5 cases involving fetid purulent rhinorrhea in which the incident of introduction of the foreign body was unknown and anterior rhinoscopy was non-contributive.

Extraction was performed in the ENT emergency unit. The child was immobilized on one of the parents' knees. The foreign body was visualized and the location, form and presentation were analyzed, and extraction was achieved using micro-instruments (forceps or micro-hook) or aspiration in 91.53% of cases ($n = 238$). The 2 cases of button cells were extracted by microforceps.

Sedation and extraction using a 0° optic was necessary in 8.46% of cases ($n = 22$), including 1 case involving a button cell.

Outcome was favorable in most cases. In 18 cases (6.9%), there was slight epistaxis, with spontaneous resolution not requiring any packing. There was 1 case of asymptomatic 7-mm antero-inferior septal perforation, discovered on extraction of a button cell by 0° endoscopy under sedation, not requiring specific treatment. Local infection in the form of purulent rhinorrhea with fever occurred in 48 cases (18.46%), requiring treatment by nasal cavity lavage with physiological saline or local antiseptics associated to 12 days' antibiotics (amoxicillin-clavulanic acid). There was no recurrence.

Table 2
Distribution according to type of foreign body.

Type of foreign body	Number	Percentage
Bead	49	**18.8**
Vegetable	46	17.7
Plastic	37	14.2
Sponge	36	13.8
Chalk	26	10
Paper	22	8.4
Cotton-wool	21	8.07
Metal	14	5.38
Stone	7	2.7
Button cell	2	0.76

4. Discussion

The few publications on nasal foreign bodies concern limited periods ranging from 6 months to 5 years [1]. In 2010, Kharoubi reported 700 cases in Algeria; in 2004, Brown et al. reported 138 cases; in 2008, Gregori et al. published a European series of 688 cases; and in 2006, Figueiredo et al. reported 420 cases seen in pediatric emergency [2].

None of these studies estimated the frequency of nasal foreign bodies within the specialized structures concerned (pediatrics, ENT, emergency), except for the Algerian study, in which they accounted for 3.9% of ENT emergency consultations and 27.2% of