A foreign body lodged in the ethmoid sinus 3 years previously: A case report

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\textbf{A B S T R A C T}

\textbf{INTRODUCTION AND IMPORTANCE:} Ethmoid sinus foreign body is a rare condition. We describe an unusual case of an intra-ethmoid foreign body that was diagnosed late, we have reported this case to make fellow readers aware of the need to carefully examine the patient victim of a road traffic accident and the imaging performed.

\textbf{CASE PRESENTATION:} A radio-opaque foreign body was detected at CT- scan of a 70- year-old man, who was the victim of a road traffic accident three years previously. The metallic foreign body was removed from the nasal cavity endoscopically without complications.

\textbf{DISCUSSION:} The presence of foreign bodies in the paranasal sinuses is extremely rare, especially following a road traffic accident, and has a lower incidence compared to facial injuries. The Symptoms are vague, which Parasanal computed tomography is the examination of choice to locate the foreign body. The best ethmoidal sinus surgical approach is endoscopy.

\textbf{CONCLUSION:} It is important to make a diagnosis and include foreign objects with a recurrence of symptoms especially from an accident on a public road and early removal with extensive debridement results in minimal tissue destruction.

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1. Introduction

Foreign bodies in different nature from the ENT cause severe damage, due to chronic irritation and infection [1] and the most frequently affected site is the nasal cavity [2].

This case report describes a case of retained foreign body in the ethmoid sinus, which was removed after 3 years despite the first physical examination post road traffic accident revealed especially by frontal headaches, however it is therefore forgotten due to the medical inexperience or a doctor overwhelmed in an emergency. We have reported this case to makeover fellow readers aware of the need to carefully examine the patient victim of a road traffic accident and the imaging performed. This case report in line with the SCARE Criteria [3].

2. Case presentation

This was a 70-year-old male patient who presented with recurrent right unilateral anterior rhinorrhea, associated with intermittent ipsilateral nasal obstruction and frontal headache, progressing for over 2 years. History began three years ago following a road traffic accident. The patient consulted in our training 2 years later. Anterior rhinoscopy showed inflammatory pituitary mucosa without rhinorrhea. Parasanal computed tomography revealed a rounded hyperdense image in the right anterior ethmoid sinus without reaction filling of the ipsilateral frontal and ethmoid sinuses (Figs. 1 and 2).

The location of the foreign body required an anterior ethmoidectomy was be performed under general anesthesia after achieving topical decongestion by inserting neurosurgical patties, soaked in 2 mL of 1:1000 adrenaline and the transnasal ethmoidectomy was performed by a qualified surgeon with 20 years of experience (Fig. 3).

The foreign body was disengaged from the ethmoid by identifying the frontonasal duct which was free of damage and pushing it further from the sinus kidney with surrounding mucosal resection without complications. It turned out to be a round metallic object (Fig. 4).

The immediate postoperative period was uneventful.

The patient is discharged after 3 days with appropriate pain medications, oral steroids for 5 days, combined amoxicillin and clavulanic acid (1 g(3)/day) for 7 days, and instructions for nasal saline irrigations after having removed the packing on the third day after surgery.

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3. Discussion

The presence of foreign bodies in the paranasal sinuses is extremely rare, especially following a road traffic accident, and has a lower incidence compared to facial injuries [4,5].

The most frequent location of foreign bodies in more than 50% of cases is in the maxillary sinus [6]. Symptoms are vague and usually discovered after extracranial and intracranial complications or by occasional X-ray images [6].

In the patient of this case, the presence of the foreign body was manifested by intermittent frontal headaches and recurrent right purulent rhinorrhea very probably related to the obstruction of the frontonasal duct during an episode of cold or added inflammation.

Whose exact entry point and foreign body trajectory were unidentified due to the 3-year deferred consultation.

Paranasal computed tomography is the examination of choice to locate the foreign body, assess its relationships for possible extraction [4].

The paranasal computed tomography (CT) scan of our patient revealed an opaque foreign body in the ethmoid sinus related to the frontonasal duct, however, the ipsilateral frontal and maxillary sinuses were without abnormalities.

CT-scan plays an important role in assessing the foreign body to surrounding structures [7].

Although MRI has the advantage of not involving any radiation, it is advisable to be careful if there is concern that there is a magnetic component in the foreign body [8].

The best ethmoidal sinus surgical approach is endoscopy which is minimally invasive safe and causes fewer complications of which a large retrospective study of complications associated with functional endoscopic sinus surgery revealed an overall complication rate of 0.50% [9].

For our part, we performed the extraction under general anesthesia, which is safer and more comfortable. The post-operation consequences after extraction of a foreign body are generally simple. Two-day wicking is usual, associated with eight-day nasal disinfection with or without postoperative antibiotic therapy [10].

4. Conclusion

A patient who presents for recurrent symptoms of the ENT Head and Neck Surgery (otorhinolaryngology) and in particular after a trauma of the public highway with point of craniofacial impact...
to maintain the suspicion of a foreign body and to explore it by carrying out a nasal sinus CT-scan.

**Declaration of Competing Interest**

The authors report no declarations of interest.

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We have any financial sources for our research.

**Ethical approval**

The study committee of the university hospital center approves the favorite opinion to publish this work.

**Consent**

Written informed consent was obtained from the patient for publication of this case report and accompanying images. A copy of the written consent is available for review by the Editor-in-Chief of this journal on request.

**Author contribution**

Dr. AB, Pr. AL, Pr. DB, Pr. AA, Pr. FE, analysed and performed the literature research and Pr. RG performed the examination and performed the scientific validation of the manuscript. Dr. Asmae Bazzout was the major contributors to the writing of the manuscript. All authors read and approved the manuscript.

**Registration of research studies**

Not applicable.

**Guarantor**

Dr. Asmae Bazzout.

**Availability of data and material**

The datasets in this article are available in the repository of the ENT database, Chu Mohamed VI Oujda, upon request, from the corresponding author.

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