

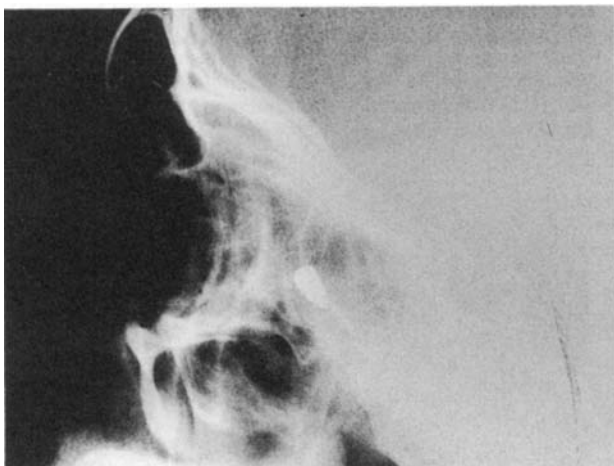
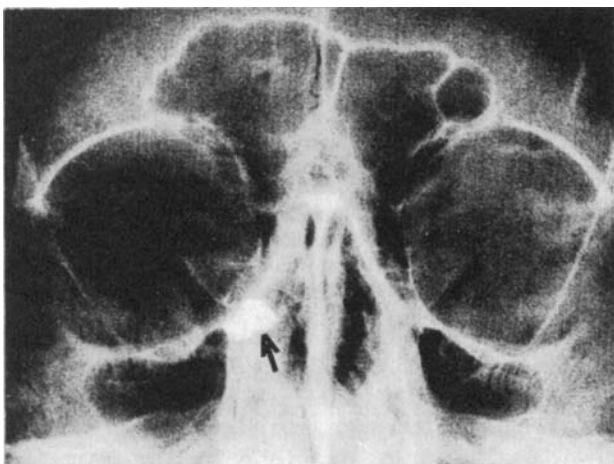
Endoscopic sinus surgery: A metallic foreign body at the sphenothmoidal junction

RANKO MLADINA, M.D. (Zagreb, Croatia)

Introduction

Foreign bodies in paranasal sinuses are mostly of traumatic origin and, in the very great majority of cases, are seen in adults (Grevers and Reiterer, 1990). When the foreign body lies somewhere inside the ethmoidal or sphenoidal sinuses, its relative inaccessibility by classical rhinosurgical approaches raises the dilemma of whether to try to remove it or to leave it alone, particularly in asymptomatic cases.

The opportunity to operate clearly, precisely and safely by



Figs. 1a & 1b

X-rays of paranasal sinuses.

(a) Postero-anterior view, showing a metallic shadow in the projection of the right nasal cavity (black arrow). Surrounding structures, including paranasal sinuses, appear quite normal.

(b) Lateral view, showing a metallic shadow in the deep area of the posterior ethmoid (?). No evident signs of facial skeleton fractures in the neighbouring areas.

means of endoscopic sinus surgery makes it possible to think about this problem differently, especially as operative and post-operative morbidity has been dramatically reduced by a minimally invasive approach and local anaesthesia (Kennedy *et al.*, 1989).

This paper reports the case of a metallic projectile at the junction of the posterior ethmoidal cells and anterior sphenoidal wall. This was the consequence of the explosion of a shell in one of the battles near Vukovar, in September 1991, during the war in Croatia.

Case report

A 20-year-old fighter had been wounded by a metallic projectile which passed through the right orbit, perforated the globe completely, destroyed the right eye and finally stopped in the posterior ethmoid. The patient was admitted to the ENT Department of Zagreb University Hospital nearly two months after the accident. He had previously been treated by an oculist because of a severe post traumatic neuropathia of the left optic nerve.

On admission, the patient complained of a boring and stubborn blistering feeling in the depth of the right orbit, 'somewhere in between the nose and the eye'. It was worse during the eye movements, whether to the right or left, up or down.

X-rays of the paranasal sinuses showed an irregularly shaped metallic shadow, sized 4 × 8 mm, in the right posterior ethmoid (Figs. 1a & 1b).

The lateral tomograms showed that the projectile was fixed at the level of the anterior sphenoidal wall, approximately in the middle of its height (Fig. 2). CT-scanning finally confirmed the diagnosis (Figs. 3a, 3b & 3c).

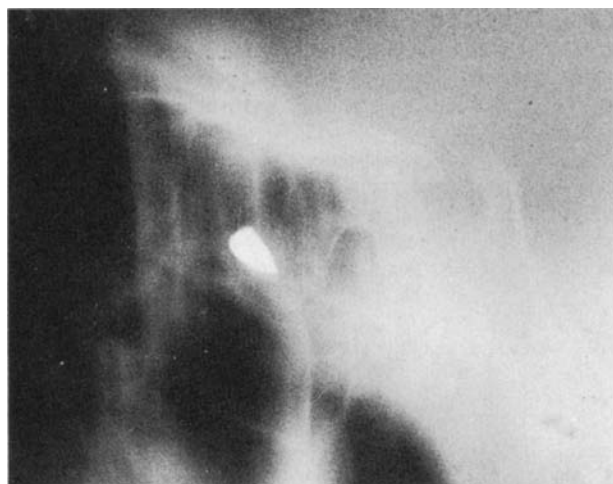


Fig. 2

Right lateral tomogram at the level of 6.5 cm. It is obvious that the foreign body is fixed at the very borderline of the posterior ethmoid and sphenoid sinuses. At first sight, it appears that the foreign body is situated inside the sphenoid sinus.

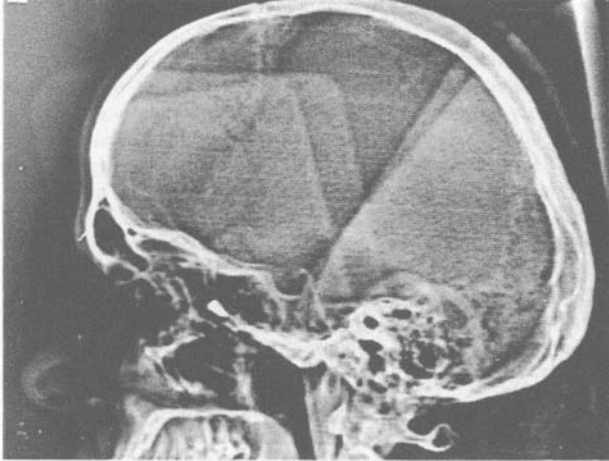


FIG. 3a



FIG. 3b

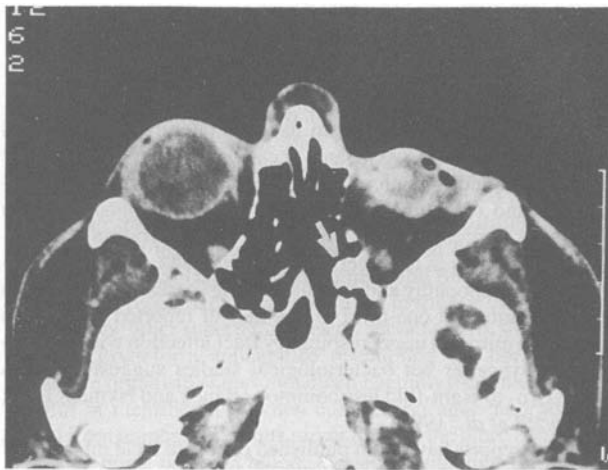


FIG. 3c

Endoscopy of the nose did not show any remarkable pathological changes or any traces of the foreign body.

An endoscopic surgical approach was performed under local anaesthesia on 5 November 1991. The bony structures of the infundibulum, anterior and posterior ethmoidal cells were mainly of normal shape and did not hinder access to the projectile. At the moment of extraction, the patient spontaneously said that the blistering feeling in the depth of the right orbit had suddenly disappeared. The post-operative period passed routinely, and no complication or recurrence of the patient's subjective troubles have been noted to date (follow up at the time of writing is three months).

Discussion

Metallic foreign bodies in the paranasal sinuses are not a rare clinical finding. They are mostly the result of an accident (explosion, for instance) and almost always are connected with orbital trauma. Sometimes they result in an asymptomatic accidental clinical finding, while sometimes they can cause severe, mostly local, troubles (stubborn headache with occipital, vertex or deep nasal pain, etc). The symptoms depend on the anatomical area involved. The prognostical problem of metallic foreign bodies in the paranasal sinuses was discussed by Kessler in 1967. Birmmeyer (1963) described a case of a maxillary carcinoma which was developed in a patient who had had a metallic foreign body inside his sinuses for 48 years.

Therefore, regardless of the subjective troubles that the patient

- FIGS. 3a, 3b & 3c
- (a) A lateral CT-scan of the skull. The metallic foreign body can be clearly seen in previously described position.
- (b) Coronal CT-scan at the level of the sphenoid sinus showing an oval hyperdense shadow in the upper right corner of the posterior ethmoid (white arrow).
- (c) An axial CT-scan at the level of the upper ethmoid. Enophthalmos of the remnant of the right eye can be easily seen and a metallic, hyperdense oval shadow is firmly fixed in the sphenothmoido-orbital corner (white arrow).

can complain of, such as a blistering feeling in the depth of the orbit, it seems worthwhile to remove the metallic foreign body from the paranasal sinuses in order to prevent any possibility, whether theoretical or practical, of the development of chronic irritation or even malignant mucosal alteration.

Functional endoscopic sinus surgery (FESS) allows removal of the deepest foreign bodies under strict visual control and with extremely low operative and post-operative morbidity.

References

- Birmmeyer, G. (1963) Über spatfolgen metallischer fremdkorper der nasennebenhohlen. *Zeltschrift fur Laryngologie, Rhinologie und Otologie*, **42**: 778–785.
- Grevers, G., Reiterer, A. (1990) Traumatisch bedingte Fremdkorper der Nasennebenhohlen. *Laryngo-Rhino-Otologie*, **69**: 155–157.
- Kennedy, D. W., Josephson, J. S., Zinreich, S. J. (1989) Endoscopic sinus surgery for mucocoeles: A viable alternative. *Laryngoscope*, **99**: 885–895.
- Kessler, L. (1967) Prognose des verbleibens von metallfremdkorpem in den nasennebenhohlen. *HNO*, **15**: 141–146.

Address for correspondence:
Assistant Professor Dr R. Mladina, M. D.,
ENT Department, University Hospital Salata,
41000 Zagreb,
Croatia.

Key words: Foreign body; Sphenoid sinus; Ethmoid sinus; Endoscopic sinus surgery