A forgotten foreign body in the frontal sinus

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Abstract A 46-year-old female patient presented with a discharging wound over the nasal bridge, near the medial end of the right eyebrow of 2 months duration. She did not give any history of trauma or surgery in the past. Wound exploration showed a glass piece in the floor of the right frontal sinus. After showing the glass piece, patient remembered road traffic accident she had at the age of 18 years. Patient was asymptomatic for 28 years.

To our knowledge, this is the longest retained case of asymptomatic foreign body in the frontal sinus reported in the world literature. Case report and a review of literature concerning foreign body in the frontal sinus are presented.

Keywords Frontal sinus · Foreign body

Introduction

The occurrence of a foreign body in the paranasal sinuses is extremely rare [1]. The frontal sinus is a rare site of lodgment of foreign body [2]. In spite of its vulnerable location, the frontal sinus is not a frequent site of lodgment of foreign body [2–4].

There have been few reports in the literature, of the patients presenting with foreign body in the frontal sinus [5]. In most of the instances, the foreign body was removed at the time of lodgment, but reports of chronic asymptomatic foreign body have been rarely reported [3, 5–7]. We report a case of an asymptomatic foreign body lodged in the floor of the right frontal sinus, lying there for 28 years. Its removal was not associated with any complication.

Case report

A 46-year-old female patient presented with a discharging wound over the nasal bridge, near the medial end of the right eyebrow for the past 2 months. It was associated with scanty purulent discharge and intermittent localized pain. She did not give any history of trauma or surgery in the past. Patient did not have relief from medical treatment.

On examination, there was a small discharging ulcer measuring 4×3 mm. Surrounding skin was edematous and tender (Fig. 1). Discharge was scanty, purulent and not foul smelling. Tenderness was present over the floor of the right frontal sinus. Rest of the ENT examination was normal.

X-ray of the paranasal sinuses showed features of right frontal sinusitis. It did not show any evidence of foreign body or bone destruction. Our patient could not afford a CT scan.

Diagnostic nasal endoscopy showed mucosal edema and yellow color discharge in the right frontal recess region.

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Fig. 1 Photograph showing wound over the right side of the nasal bridge

Fig. 4 Postoperative photograph showing healthy wound

Fig. 2 Intraoperative photograph showing glass piece

Fig. 3 Intraoperative photograph showing congested sinus mucosa

Under anesthesia wound exploration was done. A triangular piece of glass measuring $8 \times 9 \times 6$ mm was removed from the floor of the right frontal sinus (Fig. 2). Sinus mucosa was congested and edematous (Fig. 3). Postoperative period was uneventful (Fig. 4).

After showing the foreign body patient remembered road traffic accident, which she had at the age of 18 years. At the time of accident, she had a lacerated wound at the medial end of right eyebrow and it was sutured. As there was no problem, patient had forgotten about the accident. Patient was asymptomatic for 28 years.

Discussion

Patients with paranasal sinus foreign body are not commonly seen in otolaryngological practice; glass in the frontal sinus as a complication of maxillofacial trauma should be very rare, and papers dealing with this issue appear to be rare in the English literature [1].

The various foreign bodies reported in the frontal sinus are stone [8], glass pieces [1], gunshot pellets [9], bullet [3] and metallic foreign body [10]. About 70% of these foreign bodies are associated with some form of maxillofacial trauma, while the remainder occurs in patients who have had surgical treatment for dental problems. More than 50% of the foreign bodies in the paranasal sinuses are found in

the maxillary sinus. The incidences in the frontal, ethmoid and sphenoid sinuses are nearly equal [1].

Foreign body in paranasal sinuses causes vague symptoms. They are discovered either after occurrence of complication or after radiological workup for some other reason, as they may be missed if their presence is not suspected or looked for initially [1].

As glass piece is an inert foreign body, the patient may have no further symptoms. Recurrent infection or obstruction of the front nasal duct are possibilities [1, 3], Viswambaranath [5] reported a case of a glass piece in the frontal sinus, which became symptomatic after 4 months of lodgment.

Complications of foreign body in the frontal sinus are fronto-nasal duct obstruction, osteomyelitis, thrombophlebitis of the frontal lobe, focal epilepsy, meningitis, extra dural, subdural and frontal lobe abscess [1, 11].

Radiological investigations include conventional X-ray and CT scans [12]. X-ray is the first examination and gives of information about the foreign body, ant and postwalls of the frontal sinus, aeration of the sinus and condition of the sinus mucosa [1].

CT scan is a useful investigation. It shows the size, extent and relation of the foreign body to the underlying structures [12]. It localizes the foreign body accurately, assess the integrity of the anterior and the posterior wall, the condition of the mucosa, intracranial penetration and possible complications [1]. Lack of radiographic evidence of fracture of ant wall of the frontal sinus does not preclude the diagnosis of foreign body penetration [1, 11].

This case report is interesting because patient was asymptomatic for 28 years with a glass piece retained in the floor of the frontal sinus with no evidence of infection or foreign body.

Foreign body in the frontal sinus are rare but with increasing number of road traffic accidents they may become more common [1]. The presence of foreign bodies should be suspected even in seemingly trivial lacerations in cases of maxillofacial trauma [1, 4].

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