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CASE REPORTS

Unusual Frontal Sinus Trauma

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A 78-year-old female was referred to our Outpatient Department with history of trauma to the forehead three days ago caused by a cement slab accidentally falling on her. Examination revealed a 3 cm by 2 cm defect in the anterior wall of left frontal sinus with loss of the overlying skin, subcutaneous tissue and bone. Endoscopic management of this patient is discussed.

INTRODUCTION

The frontal sinuses are two irregular cavities which extend backwards, upwards and laterally for a variable distance between the laminae of the frontal bone; they are separate from each other by a thin bony septum, which is often deflected to one or other side of the median plane, with the result that the sinuses are seldom symmetrical.[1]

The frontal sinus is related superiorly to the anterior cranial fossa, olfactory niche, bulbs and tracts; inferiorly to the orbit, ethmoid labyrinth and nasal cavity and medially to the cribriform plate and olfactory niche.[2]

The health and normal function of the paranasal sinuses and their lining mucous membrane depends primarily on two important factors: ventilation and drainage.[3]

The frontal sinus ostium opens into an hourglass-shaped cleft, the frontal recess, which drains into the middle meatus of the nose.

CASE REPORT

A 78-year-old female was referred to the ENT Out Patient Department with history of a cement slab falling on her forehead three days ago. The patient had an externally exposed left frontal sinus with a 3 cm by 2 cm defect in the anterior wall of the left frontal sinus with loss of overlying skin and subcutaneous tissue (Fig. 1).

The patient gave history of medication introduced into the left frontal sinus entering the left nostril.
There was no history suggestive of CSF rhinorrhoea or intracranial complications.
A CT scan of the paranasal sinuses confirmed the fracture of the anterior wall of the left frontal sinus and also revealed the presence of multiple radio-opaque foreign - bodies within the sinus (Fig. 2).

The patient was taken up under general anaesthesia and the frontal sinus was examined endoscopically with the port of entry being the fractured defect in the anterior wall of the frontal sinus. Multiple bony chips were found lying in the sinus embedded in granulation tissue and these were gently delivered with the aid of a ball point and crocodile forceps. Absence of a fracture in the superior and posterior wall of the frontal sinus was confirmed. In addition to the fractured bone pieces, multiple pieces of cement and small pebbles were also found lying within the frontal sinus (Fig. 3).

Once the multiple foreign body pieces lying within the frontal sinus had been endoscopically cleared, the frontal ostium was visualised from above. The upper half of the uncinate process was then removed which revealed a normal fronto-nasal recess and frontal sinus ostium. The mucosa lining the sinus appeared normal though at places there was mucosal congestion seen.
The external wound edges were freshened and adequately undermined so as to achieve closure of the subcutaneous tissue and skin without tension with vertical mattress sutures (Fig. 4).

A check sinuscopy was done 1 wk and 1 month post-operatively which was normal.

DISCUSSION

The frontal sinus is prone to various complications - usually secondary to blockage in the region of the frontonasal recess and stagnation of frontal sinus secretions.

The treatment of complications of frontal sinusitis lies in clearing the sinus of the disease process and

establishing nasal drainage and aeration with the hope that mucosa reverts to normal.[4]

Frontal sinus fractures have been classified by a study conducted in Middlesex hospital[5] and going by this classification the patient had a type 1C fracture where there is loss of bone in the anterior wall of the sinus without involvement of the frontonasal duct. An exploration of the sinus and reconstruction of the bony defect by cortical bone grafts has been described. The bony reconstruction is performed so as to avoid a cosmetic deformity. As the patient was 78 years old and not concerned with long-term facial cosmesis it was decided to avoid unnecessary surgery of bone grafting. Her immediate cosmetic result was good. As in all facial fractures, the least operative intervention that will achieve the desired results should be the maxim.[6]

Since the frontal sinus in this particular case had been cleared off all its debris and bone chips and since the mucosa seemed normal with slight congestion in places, it was deemed wise to close the frontal sinus defect and allow the mucosa to revert to normal. Nowadays, with improved endoscopic techniques the role of radical surgery involving obliteration of the frontal sinus is very limited.

It is common knowledge that sequelae can occur long after primary treatment. Bearing this in mind, a regular follow-up with clinical and radiological check-up has been advised for the patient.

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LOW-INTENSITY WARFARIN THERAPY TO PREVENT RECURRENT VENOUS THROMBOSIS

The standard therapy for idiopathic venous thromboembolism is anticoagulation with heparin followed by 3 to 12 months of warfarin therapy, but after warfarin is discontinued, venous thrombosis may recur. This clinical trial compared long-term, low-intensity warfarin therapy (target international normalized ratio, 1.5 to 2.0) with placebo after completion of standard anticoagulant therapy. Low-intensity warfarin therapy was very effective and was associated with a low risk of bleeding.
This study may set a new standard for prophylactic anticoagulant therapy after an episode of idiopathic venous thromboembolism. Long-term, low-intensity warfarin therpay may become the recommended approach.
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