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Endoscopic management of Pott's puffy tumour - Still a common entity in-developing country a case series of three patients: Our experience☆

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ABSTRACT

Pott's puffy tumour is a lesser known clinical entity usually seen as complication of frontal sinusitis or trauma to frontal bone. Patients typically present with fluctuant swelling of the frontal region. It can lead to significant morbidity if not diagnosed and treated promptly. We herein present a series of three cases with diagnosis of Pott's puffy tumour, two cases following acute bacterial frontal sinusitis and third case presenting as complication of allergic fungal sinusitis. We discuss the presentation, diagnostic and treatment of Pott's puffy tumour.

1. Introduction

Pott's puffy tumour was first described by Sir Percival Pott in 1768 as "a puffy, circumscribed, indolent tumour of the scalp and a spontaneous separation of the pericranium from the skull under such a tumour" [1]. It usually occurs as a complication of frontal sinusitis or due to complication of trauma to frontal bone region. However Pott's puffy tumour secondary to allergic fungal sinusitis of frontal sinus [2], invasive aspergillosis [3], Mucormycosis [4], insect bite [5], mastoiditis [6], acute otitis media [7] has also been reported in the literature. It manifests clinically as localized fluctuant swelling in the frontal region and associated with osteomyelitis, which carries a high risk of meningitis, abscess and intracranial venous sinus thrombosis [8]. Early diagnosis and intervention is very important to avoid complications and preventing mortality. We are reporting here three cases of Pott's puffy tumour due to different aetiologies and all managed endoscopic techniques with Draff procedures.

2. Case report 1

A 15 year male patient presented to our ENT outpatient department with one month history of nasal discharge, blockade, headache which was almost continuous, moderate severity. He also gave history of swelling over forehead for 15 days which started insidiously, progressed gradually with intermittent fever. There was no history of trauma to the site. On examination patient was a febrile, vitals were stable. Investigations were like-hemoglobin-11.3 gm/dl, total leukocyte count-14,700/mm^3 with neutrophils 82% and lymphocytes 11%. Contrast enhanced computerized tomography which showed pansinusitis with collection in forehead region with defect in anterior table of frontal sinus. Patient underwent functional endoscopic Frontal sinusotomy (Draf type I) for complete removal of diseased tissues (Fig. 1). Intravenous antibiotic ceftriaxone, metronidazole and vancomycin was started preoperatively and continued for 2 weeks postoperatively. Swelling on the forehead and symptoms resolved. Follow up endoscopy revealed well healed post operative cavity.

3. Case report 2

A 12 year male patient presented with forehead swelling and forward protrusion of left eyeball for 1 year which was insidious onset and very gradually progressive. Patient didn't complain of nasal obstruction, or significant nasal discharge. There was no

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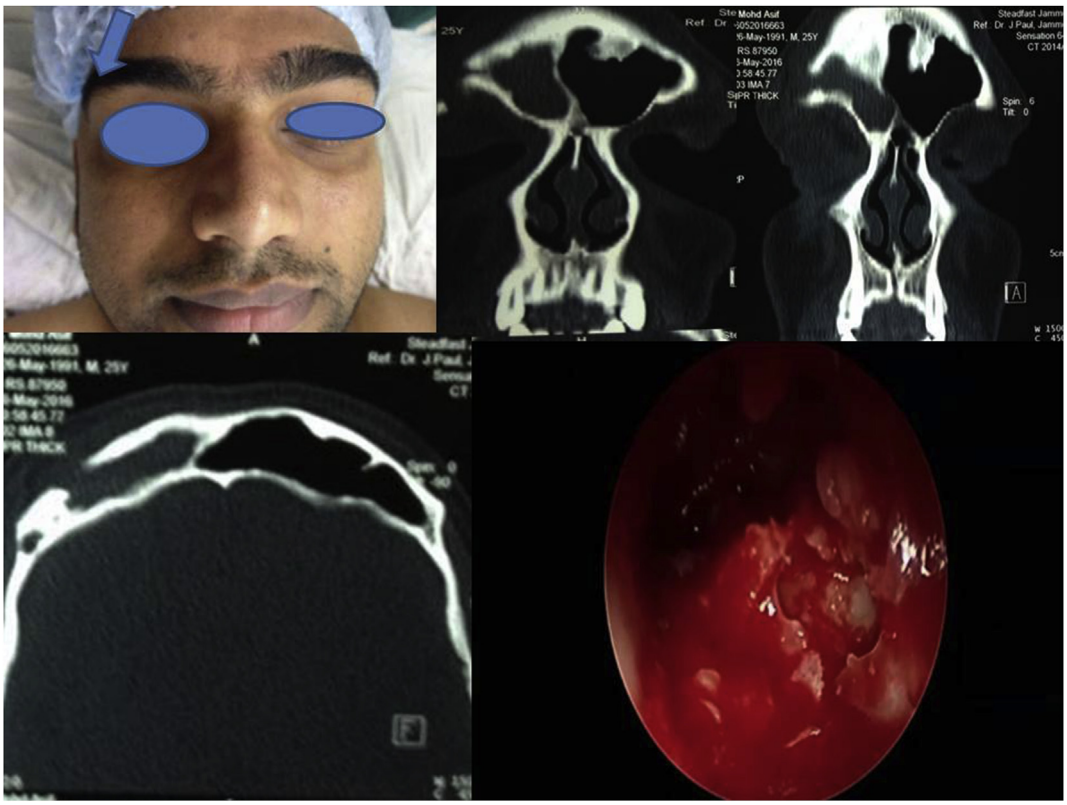

Fig. 1. Showing preoperative swelling over right frontal region and preoperative coronal and axial CT scan showing soft tissue density in frontal sinus with erosion of frontal bone and intro-operative showing frontal sinus opening on right side.

vision impairment or double vision.

On clinical examination there was an ovoid swelling of size approximately 4 *3 cm over the forehead which was soft, fluctuant in central part and bony at the periphery. There was proptosis of lt side. Visual acuity extra ocular movements, pupillary light reactions were normal on both eyes.

Noncontrast computed tomography of nose and paranasal sinuses revealed heterogeneous soft tissue density involving bilateral frontal sinuses, left side ethmoid sinus, and orbital apex area. There was erosion of lamina papyracea, skull base, anterior and posterior table of frontal sinus on left side. There was intracranial, extra dural extension of the lesion. A diagnosis of Allergic fungal sinusitis was made (Fig. 2).

Patient underwent transnasal endoscopic debridement of the lesion. Histopathological examination of the tissues was Allergic fungal sinusitis. He was started on Tab Itraconazole 200 mg twice daily for 2 months. The forehead swelling resolved completely after three months.

4. Case 3

A thirteen year adolescent girl presented to our outpatient department with complaint of forehead swelling and puffiness around left eye for 3 days which gradually progressed. Patient had headache for preceding 10 days with nasal stuffiness, upper respiratory tract infection symptoms. She never had fever during the course. She did not complaint of any visual disturbances like decreased vision or double vision. She had received decongestants, oral and topical before presenting to us. Mouth breathing, persistent nasal discharge and use of on-off medication for upper respiratory tract infections could be elicited from past medical history. Nasal endoscopy showed congested nasal mucosa with mucopurulent discharge more on the left side which was sucked out. Patient was admitted and started on injectable antibiotics empirically. Blood investigations were normal except for marginally elevated total leukocyte counts (12300/μl). Patient was observed closely. After 24-hr, though patient was clinically stable, swelling over the forehead region became fluctuant so decision to operate upon the patient was taken. Endoscopic Frontal sinusotomy was done and 10–12 ml of mucopurulent discharge drained from the frontal sinus. It was collected for Gram staining and culture. In the same sitting, functional endoscopic sinus surgery was done. Bilateral frontal sinuses were opened and thoroughly irrigated (Fig. 3). Nasal packing was removed after 12 h. Nasal decongestants continued with inject able antibiotics. Gram stain revealed pus cells only with no growth on culture. Patient improved drastically after surgery with complete disappearance of frontal swelling after 2 weeks of surgery.

5. Discussion

Pott's Puff tumour was first described by Sir Percival Pott in 1768 [1]. It is not neoplastic condition rather it is infective condition and occurs due to local sub periosteal abscess formation over the frontal bone. It commonly is result of complication of frontal sinusitis or due to trauma of the frontal bone.[2]Since the advent and widespread prescription of antibiotic therapy, Pott's puffy tumour has become a rare entity, largely confined to individual case reports or small case series.

It can occur in any age group from 7 to 83 yrs, it is most frequently seen in teenagers. The frontal sinuses become pneumatised at 2 years of age and reach close to adult size in the

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