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Case Report

Inverted papilloma of frontal sinus with intracranial extension

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Introduction

Inverted papilloma (IP) is a benign epithelial neoplasia that accounts for 0.5–4% of all primary nasal tumours.[1] It is characterised by an endophytic or inverted growth pattern of epithelium with ramifications into the underlying stroma rather than outward proliferation from the surface with an intact epithelial basement membrane.[2] It affects all ages, most commonly males (M:F 3:1–5:1) in the fifth to the seventh decades of life (average age 53 years).[1,3] The most frequent sites are the lateral nasal wall near the middle turbinate or ethmoid recesses and the maxillary sinuses. Although a benign lesion, IP is characterised by its relatively high recurrence rate, local aggressiveness and potential for malignant transformation. We present a rare case of IP arising from frontal sinus with extension into anterior cranial fossa treated with craniofacial resection.

Case report

A 28-year-old male patient reported with suffering of 2-year history of right sided nasal blockage, frontal headache and hyposmia. There was no history of epistaxis, rhinorrhoea, ophthalmologic or neurologic symptoms. On anterior rhinoscopy and nasal endoscopy a pinkish polypoidal mass was visualised in right middle meatus which was sensitive to touch (Fig. 1). There was no evidence of proptosis, diplopia, cranial nerve palsy or palpable cervical lymphadenopathy. NCCT PNS revealed mass in right frontal recess extending into nasal cavity with features suggestive of mucocele in frontal sinus with erosion of posterior table of frontal sinus with no intracranial extension (Fig. 2). MRI PNS confirmed the findings of CT scan (Fig. 2a). A biopsy of mass was undertaken and histopathological examination was suggestive of inflammatory polyp with no fungal elements seen.

A diagnosis of benign inflammatory nasal polyp with frontal mucocele (right) was made and patient underwent endoscopic clearance of polypoid tissue from right frontal recess with drainage of right frontal mucocele. HPE of resected specimen showed inverted papilloma (Fig. 3). As the surgery was undertaken for a benign lesion and histopathological diagnosis was of a benign tumour, it was planned to review

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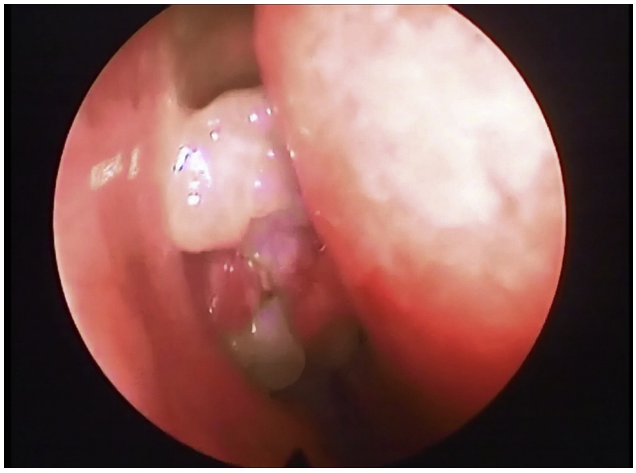

Fig. 1 – Endoscopic view of polypoidal mass in right middle meatus.

the patient after 4 weeks with repeat imaging to evaluate completeness of excision. Three weeks post-operatively patient had two episodes of generalized tonic clonic seizures. CEMRI revealed solid enhancing lesion (1.5 × 2 cm) right frontal sinus with extension through defect in posterior table of frontal sinus into anterior cranial fossa and frontal lobe with abscess (2 × 1.5 cm) in right frontal lobe causing midline shift of 7 mm to right (Fig. 4).

Patient was reviewed jointly by neurosurgeon and otolaryngologist and was taken up for right frontal craniotomy and excision of tumour and abscess with clearance of nasal part endoscopically (Fig. 5a–d). Right sided frontal craniotomy revealed 1.5 × 2 cm lesion eroding posterior wall of frontal sinus and extending to the frontal lobe with a 2 × 2 cm well encapsulated abscess surrounding the tumour in the frontal lobe. Complete excision of tumour along with the abscess was carried out with the nasal clearance of tumour done endoscopically. Dural defect was closed using galeal flap. HPE

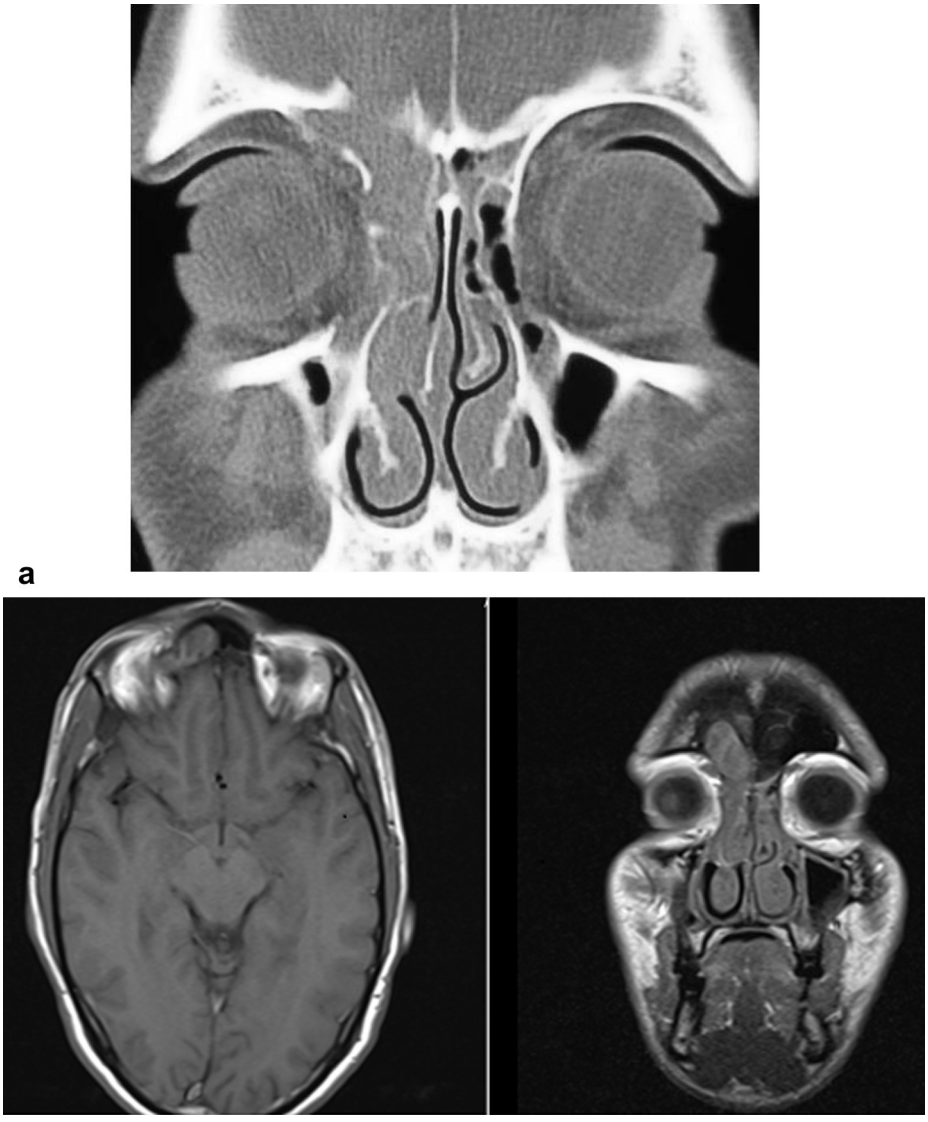

Fig. 2 – Coronal CT scan showing mass in right frontal recess with features suggestive of mucocele in frontal sinus eroding posterior table of frontal sinus. (a) Coronal and axial cuts of MRI PNS showing mass in right nasal cavity with extension to frontal recess and erosion of posterior table of frontal sinus.