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## Case report/Kazuistyka

# An unusually giant frontoethmoidal mucopycele in a child – A case report



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## ABSTRACT

Mucocoeles are expansile benign mucus-filled cystic lesions of the paranasal sinuses as a result of the chronic obstruction to sinus ostia. It is rarely seen in children. Secondary infections of the mucocoeles result in the formation of a mucopycele. The proximity of these lesions to the orbit and brain may cause morbidity and potential mortality, if left without intervention. Here we came across a 12-year-old child who had a giant right side frontoethmoidal mucopycele causing proptosis and lateral displacement of the right eye with normal visual acuity. Here, the case, the experience and the outcome of the endoscopic marsupialization of the frontoethmoidal mucopycele, are being discussed.

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## Introduction

Mucocoele is a benign and expansile cystic lesion lined with respiratory mucosa of pseudo stratified columnar epithelium [1]. Mucocoeles arising inside the paranasal sinus are expansile in nature, slow in growth and may affect neighboring structures such as orbit and the intracranial structures [2]. Mucocoeles of the paranasal sinuses were first documented by Langenbeck (1820) under the name of hydatids and Rollet (1909) coined the name mucocoele [3]. An infected mucocoele is called a pyocoele or muco-pyocoele. The incidence of mucopycele of paranasal sinuses in general population is 0.4–0.8% [4].

Any paranasal sinus can form a mucocoele but frontal and ethmoid sinuses are most commonly affected followed by sphenoid and maxillary sinus. Expansion of mucocoele may take place over several years whereas it expands rapidly when associated with secondary infection leading to pyocoele. Frontoethmoidal, ethmoidal, maxillary and sphenoid sinus mucopyceles are excellent indications for exclusive endonasal endoscopic surgery. The endoscopic approach avoids external incision and associated morbidity and it has distinct advantage over the external frontoethmoidectomy. We report an unusual giant mucopycele arising from the bulla ethmoidalis and frontal sinus invading into the orbit of a 12-year-old boy managed by endoscopic marsupialization.

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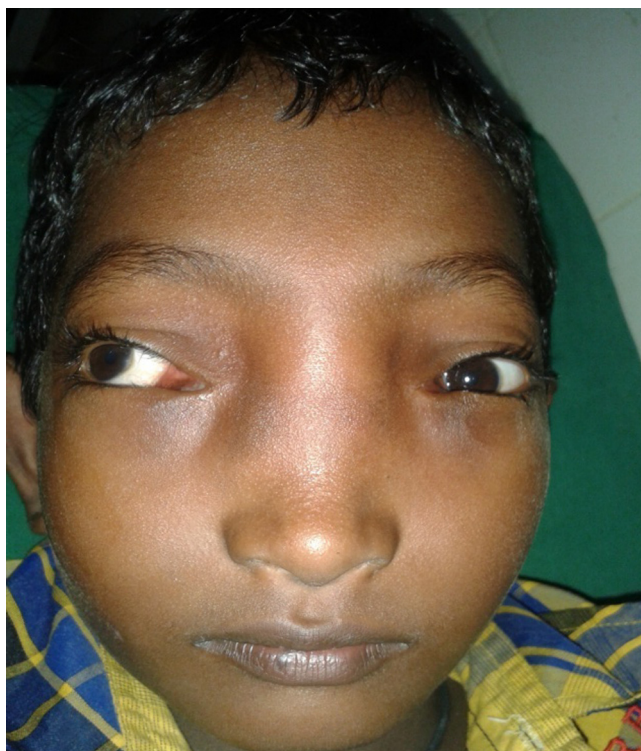
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## Case report

A 12-year-old boy presented at the Otorhinolaryngology outpatient department with complaints of gradually progressive right nasal obstruction, frontal headache and right side orbital proptosis since last 2 years. He had complaints of right side facial pain with reduced sense of smell. There was no history of nasal discharge, nasal bleeding, loss of vision or epiphora. He has no history of allergic rhinitis with no other medical co-morbidities. There was no previous history of trauma or surgery. He was taking treatment from local physician for proptosis of eye for over two years but no improvement. On examination, there was proptosis in the right side with downward and outward displacement of right eye with normal eye ball movements (Fig. 1). Diagnostic nasal endoscopy showed a large smooth bulging over the right lateral wall of nose above inferior turbinate with presence of pus points in the middle meatus (Fig. 2). The swelling seemed to impinge the septum. Computed tomography (CT) scan of the nose and paranasal sinus showed a large soft tissue density lesion of size  $12 \times 7 \times 5$  cm in the right frontoethmoid area (Fig. 3). The patient underwent endoscopic excision of the mucocoele with a wide middle meatal antrostomy and opening of the frontal recess area (Fig. 4). Purulent fluid was seen intraoperatively from the mucocoele. A bacteriological swab taken from the pus inside the pyomucocoele revealed growth of Gram positive cocci (*Staphylococcus albus* and *Staphylococcus viridians*) in the culture. Post-operatively, the patient is symptom free.



**Fig. 1** – Patient showing proptosis of the right eye with outward displacement



**Fig. 2** – Nasal endoscopy showing expansile mass of frontoethmoidal mucopyocoele with pus point at middle meatus

## Discussion

The long-standing obstruction of sinus ostia or compartment of septate sinus helps in the formation of benign,



**Fig. 3** – CT scan of paranasal sinus (coronal cut) showing a giant mucopyocoele at the frontoethmoidal area

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