Mucocele of the Middle Turbinate A Case Report

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A mucocele is defined as an epithelial lined, mucus containing sac, predominantly arising from the frontal and ethmoid sinuses, it is rarely reported in the middle turbinate. We present a case of a unilateral mucocele of the middle turbinate in a young, Bahraini, Arab, male, the pathogenesis and management are discussed.

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A mucocele is defined as an epithelial lined, mucus containing sac completely filling the sinus and capable of expansion[1]. All paranasal sinuses can develop a mucocele, with the frontal and ethmoid sinuses being the most commonly affected followed by the maxillary and sphenoid sinuses[2]. Uncommon locations of mucocele formation have been described, these include the pterygo-maxillary space, orbital floor, and middle turbinate[3]. We present a case of unilateral mucocele of the middle turbinate in a 33-year old, male. The pathogenesis and management are discussed.

THE CASE

A 33-year old, Bahraini, male presented to the ENT clinic complaining of right sided, severe and continuous headache, associated with nausea, vomiting, photophobia and nasal obstruction. The patient gave a history of trauma to the nose two years ago. Examination revealed a huge right middle turbinate and a left septal spur pressing on the middle turbinate.

CT scan confirmed the physical findings showing an expansile lesion within the right middle turbinate in contact with the nasal septum(Fig.1). The patient underwent right sided FES surgery, using the Messerklinger technique, with 4mm 0° and 30° telescopes. Right middle turbinectomy was performed by initially clipping the middle turbinate using mosquito forceps, this caused crushing of the middle turbinate and reduced bleeding. A cavity filled with mucous was revealed and was emptied by suction followed by removal of the middle turbinate bone.

Septoplasty was done to relieve the contact points between the nasal septum and the left middle turbinate. Widening of the maxillary ostium was also performed. The nose was packed with merocele for 24-hours. The postoperative period was uneventful and the patient felt a dramatic relief of the headache from the first postoperative day.

DISCUSSION

Mucoceles of the paranasal sinuses are true mucus retention cysts with an epithelial lining, prinicipally caused by obstruction of the outflow of secretions[3]. Middle turbinate mucoceles are rarely reported[2]. The middle turbinate is integrated into the ethmoid air cell system, therefore, ethmoid disease extends into the middle turbinate, but not into the inferior turbinate[4]. It is apparent that obstruction to the outflow of secretions from the sinus is a prerequisite for mucocele formation. Causes of obstruction are inflammatory, neoplastic or post-traumatic[5,6]. Pneumatization of the anterior part of the middle turbinate is a potential site for a mucocele[5]. The aerated middle turbinate may itself be involved and chronic obstruction of the concha may produce a mucocele within the middle turbinate[7,8].

A careful history and physical examination can usually pinpoint the problem, and radiographic studies may be necessary[9]. In this case physical examination showed a huge right middle turbinate and a left septal spur pressing on the middle turbinate. A local anaesthetic was injected into the middle turbinate after which the patient felt a relief of the headache. The headache therefore was initially attributed to contact points between the middle turbinate and the septum. However, the presence of contact points at endoscopy or on CT scan is not pathognomic of this problem[10]. CT scan also showed an expansile lesion within the right middle turbinate (Fig-1) and the diagnosis of mucocele was only made at surgery after partial middle turbinectomy.

With the advent of CT scan, thorough evaluation of the location and regional extension of the paranasal sinus

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mucocele was possible. MRI offers similar excellent delineation of the extent of disease in multiple imaging planes. The extreme differences in MRI signal intensity seen in the mucocele appears to reflect variable hydration of the mucoid contents of the obstructed sinuses[11].

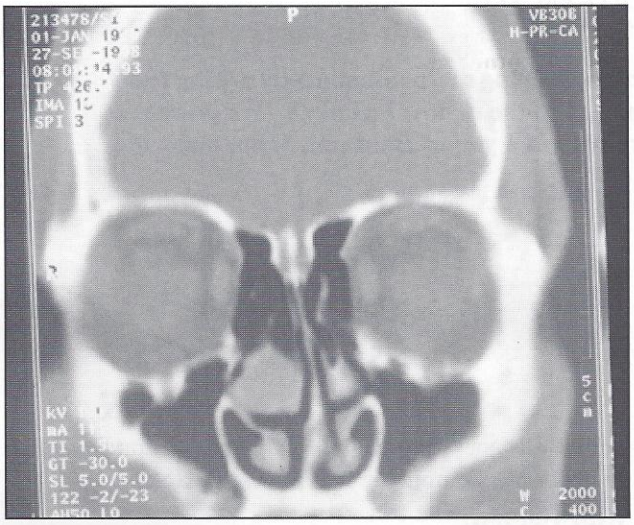

Figure 1. Coronal CT scan of the paranasal sinuses showing mucocele the middle turbinate.

The frequency of hyperdense mucocele on CT in one series was 66%[11].The use of godapentelate dimeglumine for contrast enhancement at MR imaging is useful for differentiating mucoceles from neoplasms in the sinonasal tract[12]. MRI appearance of paranasal sinus mucocele is quite variable, depending on the composition of the mucocele[11].

An endoscopic approach is ideal for removal of mucocele of the paranasal sinuses particularly in the young, offering excellent results with minimal morbidity. In cases where anatomic and pathologic factors cause technical difficulties to achieve wide marsupialization during endoscopic approach alone, a combined endoscopic and external approach are recommended with good long term results[13].

Conclusion

Middle turbinate mucoceles are rarely reported. Obstruction to the outflow of secretions is a prerequisite for mucocele formation. Physical examination can usually pinpoint the problem however radiological studies such as plain films and CT scan may be necessary. Mucocele of the middle turbinate is best treated by an endoscopic approach either alone or combined with an external approach.

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