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Case Report

Nasal Septal Mucocele in an Adolescent: A Rare Case Report

S. Elouahab*, S. Hafidi , M. Lahjaouj, M. Loudghiri, W. Bijou, Y. Oukessou, S. Rouadi, R. Abada, M. Roubal and M. Mahtar

Department of Otorhinolaryngology, Head and Neck Surgery (ENT), 20 August Hospital, CHU Ibn Rochd, Casablanca, Morocco

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***Corresponding author:** Elouahab Sara, Department of Otorhinolaryngology, Head and Neck Surgery (ENT), 20 August Hospital, CHU Ibn Rochd, Casablanca, Morocco.

ABSTRACT

Nasal septal mucocele is an exceptionally rare entity, particularly in adolescents. We report the case of a 15-year-old boy presenting with a one-year history of bilateral nasal obstruction, nasal pain, anosmia, and intermittent epistaxis, without prior trauma or surgery. Clinical examination revealed a septal mass. Computed tomography and magnetic resonance imaging showed a well-defined cystic lesion of the nasal septum, consistent with a mucocele and without bony erosion. The patient underwent endoscopic endonasal drainage and complete excision with mini-septoplasty. Postoperative evolution was favorable, with complete symptom resolution and no recurrence at three months. Septal mucoceles are rare and may present with nonspecific symptoms, leading to delayed diagnosis. Imaging is essential for diagnosis, and endoscopic surgery remains the treatment of choice, providing excellent outcomes with minimal morbidity.

Keywords: Mucoceles; Paranasal sinuses; Cystic Fibrosis; Inferior meatuses

Introduction

Mucoceles are chronic, benign, and expansive cystic lesions of the paranasal sinuses, characterized by encapsulated masses containing mucus. Their progression is generally slow, and symptoms often appear several years after their formation. These lesions are considered secondary to obstruction of the sinus ostium, which can result from inflammation, trauma, fibrosis, or prior surgery[1,2]. They are most frequently observed in adults. In the pediatric population, paranasal sinus mucoceles are rare and are often associated with cystic fibrosis[2-5].

The clinical presentation varies depending on the size and location of the mucocele. The frontal and ethmoid sinuses are the most common sites, while the maxillary and sphenoid sinuses are less frequently involved[7,13]. To date, only 16 cases have been reported[6]. Most cases have a history of trauma. However, idiopathic septal mucocele is rarer.

Case Report

A 15-year-old boy presented with one year history of bilateral nasal obstruction. He also reported nasal pain. He had anosmia and 2 episodes of epistaxis and denied any visual symptoms. He had no history of major maxillofacial trauma and nasal surgery. Anterior rhinoscopy demonstrated a bilateral mass originating from the nasal septum **(Figure 1)**. Nasoendoscopic evaluation revealed an anterior septal mass, while the middle

and inferior meatuses were patent, the choanae unobstructed and the nasopharynx appeared clear and symmetrical. The rest of the otolaryngologic examination including cranial nerve examination and ophthalmic examination was normal. Computed tomography (CT) of the nasal septum revealed a well-defined, ovoid, fluid-filled lesion measuring 38 × 12.5 mm (axial) and 35.5 mm (sagittal), containing a few air bubbles. Moderate peripheral wall enhancement was noted after contrast administration, with no bony erosion. Imaging features were consistent with a benign septal mucocele **(Figure 2)** and magnetic resonance imaging (MRI) **(Figures 3 and 4)** Presence of a mass at the level of the cartilaginous part of the nasal septum measuring 28 × 11 mm, extending over 32 mm, showing hypo intensity on T1 and hyperintensity on T2. The patient underwent endoscopic drainage and complete excision of a septal mucocele, accompanied by endoscopic mini-septoplasty under general anaesthesia. Intraoperatively, no residual cartilage or bony septum was observed within the mucocele, which contained mucoid fluid without evidence of infection. Nasal packings were removed postoperatively and the patient was discharged 48 hours after the procedure. During a 3 months follow-up, the patient remained asymptomatic and no recurrence of the lesion was detected.

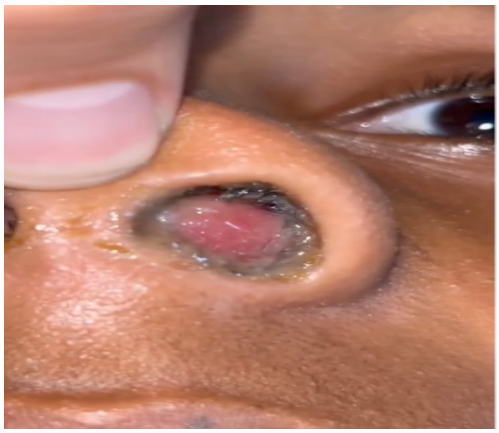

Figure 1: Anterior rhinoscopy demonstrated a bilateral mass originating from the nasal septum.

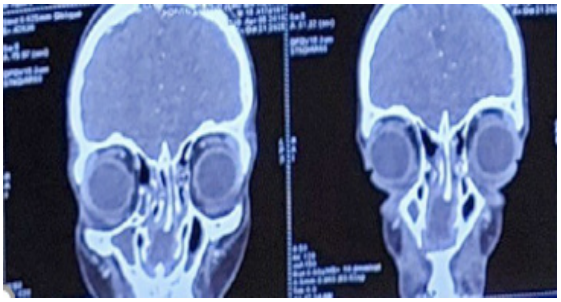

Figure 2: Coronal computed tomographic scan showing mucocele of the nasal septum.

Discussion

Paranasal mucoceles are benign cystic lesions characterized by progressive accumulation of mucus secondary to obstruction of the sinus drainage pathway[1,7]. They occur most frequently in the frontal and ethmoidal sinuses, whereas localization within the nasal septum remains extremely rare[1,7,8]. Only a limited number of septal mucoceles have been reported in the literature, which explains the clinical interest of the present case[6,7-9].

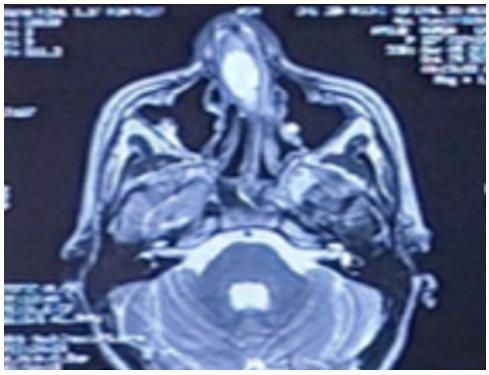

Figure 3: Magnetic resonance imaging axial view showing a midline septal mass.

Figure 4: Magnetic resonance imaging coronal view showing a mass within the nasal septum.

The pathophysiology of mucoceles is generally related to obstruction of mucus-secreting epithelium caused by chronic inflammation, infection, trauma or previous nasal surgery[1,7,10,11]. However, in paediatric and adolescent patients, the etiology is often unclear. Yilmaz et al. reported a similar case in a child without any history of trauma or prior nasal surgery, suggesting a possible idiopathic origin or the role of minor unrecognized trauma[8]. This observation is consistent with our case, in which no predisposing factor was identified.

Clinical presentation depends mainly on the size and location of the lesion. Mucoceles may remain asymptomatic for many years and become symptomatic only after progressive expansion and compression of adjacent structures[1,7,12]. In septal mucoceles, bilateral nasal obstruction is the most frequently reported symptom due to progressive bulging of the nasal septum[8,9]. In our case, bilateral nasal obstruction was also the main complaint, but it was associated with anosmia and recurrent epistaxis, which are less frequently reported symptoms and may be explained by the relatively large size and anterior location of the lesion.

Endoscopic nasal examination plays a key role in the initial diagnosis, typically revealing a submucosal septal mass[7,8]. Imaging is essential to confirm the diagnosis and exclude other pathologies. Computed tomography usually demonstrates a well-defined cystic lesion and allows evaluation of bone erosion, whereas magnetic resonance imaging provides additional information regarding the cystic nature of the lesion and its relationship with adjacent structures[3,7,8]. The imaging findings in our patient were consistent with those previously described in the literature.

Endoscopic endonasal surgery is currently considered the treatment of choice for septal mucoceles[4,7,8]. This approach allows complete drainage or excision of the lesion with minimal morbidity and excellent functional results[4,8]. In our case, endoscopic drainage combined with complete excision and mini-septoplasty resulted in complete resolution of symptoms without recurrence during follow-up.

Although extremely rare, septal mucocele should be considered in the differential diagnosis of any progressive septal mass, particularly in paediatric and adolescent patients[6-9]. Early diagnosis and appropriate surgical management provide an excellent prognosis and help prevent complications related to progressive expansion of the lesion[1,4,7].

Conclusion

Nasal septal mucocele represents an extremely rare location of paranasal mucoceles, particularly in children and adolescents[1,7,8]. Because of its rarity and non-specific clinical presentation, the diagnosis may be delayed and should be considered in any patient presenting with a progressive septal mass and bilateral nasal obstruction[1,3]. Nasal endoscopy associated with imaging, especially computed tomography and magnetic resonance imaging, plays a crucial role in establishing the diagnosis and excluding other septal lesions[3,7,8].

Endoscopic endonasal surgery currently represents the treatment of choice, allowing complete removal with minimal morbidity and excellent functional outcome[4,7,8]. The present case highlights the importance of early diagnosis and appropriate surgical management to prevent potential complications related to progressive expansion of the lesion[1,4,7,13,14].

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