



From Frontoethmoidal Mucocele to Orbital Apex Syndrome: A Rare Case Report

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Abstract

Frontoethmoidal mucocèles are benign but locally aggressive lesions that may cause significant orbital complications when diagnosis is delayed. We report the case of a 52-year-old patient with a history of migraine presenting with a one-week history of progressive right periorbital pain, followed by ptosis, ophthalmoplegia, mild proptosis, and decreased visual acuity. CT imaging of the paranasal sinuses demonstrated opacification of the right frontoethmoidal sinus with erosion of the lamina papyracea and infraorbital extension.

The patient was managed with empirical intravenous antibiotics followed by endoscopic endonasal surgery. Intraoperative findings confirmed a frontoethmoidal mucocele. A Draft III procedure with marsupialization was performed. The postoperative course was uncomplicated, with progressive recovery of ocular motility and visual function.

This case emphasizes the importance of early radiological evaluation in patients presenting with atypical orbital symptoms and supports endoscopic management as the preferred approach for complex frontal sinus mucocèles.

Keywords: Critical care medicine; Fronto-ethmoidal mucocele; Orbital apex syndrome; Orbital complication; Endonasal surgery; Draft III

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Introduction

Paranasal sinus mucocèles are mucus-filled, epithelium-lined lesions resulting from obstruction of sinus drainage pathways. They most commonly involve the frontal and ethmoidal sinuses and are characterized by slow expansion with progressive bone erosion.

Orbital involvement may result in orbital apex syndrome, a rare but severe condition involving cranial nerves II, III, IV, V1, and VI, leading to ophthalmoplegia, ptosis, and visual impairment.

CT scan of the paranasal sinuses remains the imaging modality of choice for diagnosis and surgical planning, while endoscopic surgery is currently the standard treatment for complicated mucocèles.

Case Presentation

A 52-year-old patient with a history of migraine since the age of 26 presented with a one-week history of progressive right periorbital headache. The patient was afebrile and in good general condition.

Ophthalmological examination revealed right ptosis, complete ophthalmoplegia, grade I exophthalmos, and decreased visual acuity (Figure 1).

CT scan of the paranasal sinuses showed homogeneous opacification of the right frontoethmoidal sinus with erosion of the lamina papyracea and infraorbital extension, suggestive of a complicated mucocele (Figure 2).

Empirical intravenous antibiotic therapy was initiated, followed by endoscopic endonasal surgery. Intraoperative findings confirmed a frontoethmoidal mucocele. A Draft III procedure with wide marsupialization was performed (Figure 3).

Postoperative evolution was favourable with progressive recovery of ocular motility and visual function (Figure 4).



Figure 1: Patient with ptosis of the right eye, associated with ophthalmoplegia, grade I right exophthalmos.

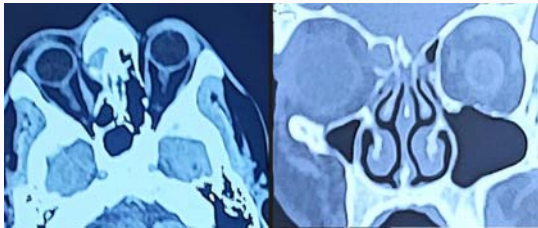


Figure 2: Axial and coronal CT scan images of the paranasal sinuses showing right frontoethmoidal sinus opacification with lamina papyracea erosion and ipsilateral infraorbital extension.

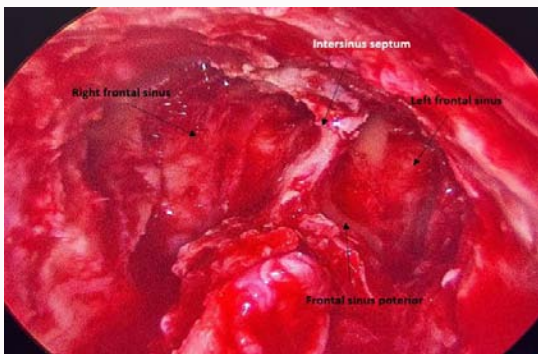


Figure 3: Intraoperative image showing the frontal sinus after a Draft III procedure and marsupialization of the mucocoele.



Figure 4: The patient, 10 days postoperatively, showed marked clinical improvement.

Discussion

Frontoethmoidal mucocoeles are benign lesions resulting from obstruction of sinus drainage pathways, leading to progressive mucus accumulation and expansion. Histopathological studies have demonstrated that their gradual growth is associated with bone

remodelling and erosion of adjacent structures [2]. Progressive enlargement may involve the lamina papyracea, allowing orbital extension.

Orbital apex syndrome is a rare but severe complication characterized by involvement of cranial nerves II, III, IV, V1, and VI, leading to ophthalmoplegia, ptosis, and visual loss [1,5]. The absence of systemic signs such as fever is common, as mucocoeles are usually sterile lesions.

CT scan of the paranasal sinuses remains essential for diagnosis, allowing precise evaluation of sinus opacification, bone erosion, and orbital involvement [1,6]. MRI may be useful in selected cases to further characterize soft tissue extension.

Surgical management is mandatory in complicated cases. Endoscopic approaches have replaced external techniques due to lower morbidity and favourable outcomes [3,4]. The Draft III procedure allows wide drainage of the frontal sinus and is indicated in extensive disease [4].

Large surgical series have demonstrated the effectiveness of endoscopic management of mucocoeles, with high success rates and low recurrence [7]. Early surgical intervention is critical for visual prognosis, as delayed treatment may result in irreversible optic nerve damage [3,5,7].

Conclusion

Frontoethmoidal mucocoeles can present with severe orbital complications including orbital apex syndrome. Early diagnosis using CT imaging and prompt endoscopic surgical management are essential to prevent irreversible visual loss. The Draft III procedure is an effective and safe approach in complex cases, ensuring durable functional recovery.

References

1. Fokkens WJ, Lund VJ, Hopkins C, Hellings PW, Kern R, Reitsma S, et al. European Position Paper on Rhinosinusitis and Nasal Polyps 2020. *Rhinology*. 2020;58(Suppl S29):1-464.
2. Lund VJ, Milroy CM. Fronto-ethmoidal mucocoeles: a histopathological analysis. *J Laryngol Otol*. 1987;101(10):1033-9.
3. Courson AM, Stankiewicz JA, Lal D. Contemporary management of frontal sinus mucocoeles: a meta-analysis. *Laryngoscope*. 2014;124(2):378-86.
4. Zukin LM, Hink EM, Snyderman CH, Gardner PA, Tyler-Kabara EC, Wang EW. Endoscopic management of paranasal sinus mucocoeles: a systematic review and meta-analysis. *Otolaryngol Head Neck Surg*. 2017;157(6):1000-8.
5. Casale M, Moffa A, Cassano M, Pagliuca G, Salvinelli F. Frontal sinus mucocoele with orbital extension: a case report. *Int J Surg Case Rep*. 2019;61:259-62.
6. Lloyd G, Lund VJ, Savy L, Howard D. Optimum imaging for mucocoeles. *J Laryngol Otol*. 2000;114(3):233-6.
7. Har-El G. Endoscopic management of 108 sinus mucocoeles. *Laryngoscope*. 2001;111(12):2131-4.