

## Contribution of Nasal Endoscopy in the Treatment of Fronto-Ethmoidal Mucocele with Orbital Extension: A Case Report.

### Apport de l'endoscopie nasale dans le traitement d'une mucocèle fronto-ethmoïdale à extension orbitaire: A propos d'un cas.

Illé S, Djafarou AB, Amadou Issa S, Hamza Abdou B.  
ENT Department, Niamey General Reference Hospital

#### ABSTRACT:

The authors report a case of left fronto-ethmoidal mucocele with ipsilateral orbital complications. The CT scan of the paranasal sinuses with contrast and reconstruction showed a left fronto-ethmoidal mucocele with downward and outward displacement of the eyeball approximately 25 mm from the midline and a 10 mm elevation of the upper left orbital rim. Excision of the mucocele was carried out by endonasal endoscopic surgery. The 3-month follow-up is satisfactory, with no recurrence. Based on a review of the literature, we report our experience in the endoscopic treatment of frontoethmoidal mucocele with orbital extension.

**Keywords:** Frontoethmoidal mucocele; Orbital complications; Endoscopic endonasal surgery; Niger.

#### ABSTRAIT:

Les auteurs rapportent un cas de mucocèle fronto-ethmoïdale gauche avec complications orbitaires ipsilatérales. La tomodensitométrie des sinus paranasaux avec contraste et reconstruction a montré une mucocèle fronto-ethmoïdale gauche avec un déplacement vers le bas et vers l'extérieur du globe oculaire à environ 25 mm de la ligne médiane et une élévation de 10 mm du bord orbitaire supérieur gauche. L'excision de la mucocèle a été réalisée par chirurgie endonasale. Le suivi à 3 mois est satisfaisant, sans récurrence. Sur la base d'une revue de la littérature, nous rapportons notre expérience dans le traitement endoscopique de la mucocèle frontoethmoïdale avec extension orbitaire.

**Mots-clés :** Mucocèle frontoethmoïdale ; Complications orbitaires ; Chirurgie endonasale endoscopique ; Niger.

#### INTRODUCTION

Mucocele are slowly progressive, expansive, pseudo-cystic tumours that develop at the expense of the mucosa of the various sinus cavities of the face. Despite their benign histology, fronto-ethmoidal mucoceles have an aggressive potential with regard to the orbit and are responsible for several orbital complications. These formidable complications can directly threaten the functional prognosis of the eye (reduced visual acuity or blindness) and pose aesthetic problems for the patient (repression of the eyeball, exophthalmos, facial deformity).<sup>1</sup> Surgery is the treatment of choice for mucoceles and consists of removing the cyst and drainage of the affected sinus. We report a case of a large fronto-ethmoidal mucocele with orbital extension. We describe the aesthetic and functional consequences of the mucocele's orbital extension, the CT Scan findings and the results of the endonasal surgical approach under endoscopic control.

#### Corresponding Author

Illé Salha

ENT and Head and Neck Surgery, Faculty of Health Sciences,  
Abdou Moumoumi University of Niamey, BP 10896, Niamey-  
Niger.

Tel :0022791826195 ou 0022796097696

E-mail : ille\_salha07@yahoo.fr

#### CASE PRESENTATION

The patient was 49 years old, male, trader with no previous history of sinus disease. He was referred from the ophthalmology department for the treatment of a left fronto-ethmoidal tumour that was pushing back the left eyeball and had been evolving for 12 months. The clinical symptoms were initially marked by left fronto-orbital pain, ipsilateral nasal obstruction, visual disturbance, lacrimation, and progressive decline in left visual acuity. He had a frontal curvature and left medial canthal curvature, with a

progressive downward and outward eyeball displacement. The painful episodes localized to the swelling warranted a consultation and medical treatment (combination of amoxicillin and clavulanic acid and analgesic) by a general practitioner. The Ear, Nose, and Throat (ENT) examination on admission revealed a left fronto-ethmoidal tumefaction pushing the eyeball down and out, with a soft, non-tender consistency and no inflammatory signs nearby (Figure 1). The nasal endoscopy revealed hypertrophy of the left inferior turbinate and bulging of the middle meatus. The right nasal cavity was normal. No clinically palpable cervical lymphadenopathy was noted. The rest of the ENT examination was unremarkable. The ophthalmological examination revealed a left exophthalmos and a decreased left visual acuity estimated at 4/10. The right eye was normal. A CT scan of the paranasal sinuses with contrast and reconstruction showed a left fronto-ethmoidal mucocele with downward and outward displacement of the eyeball approximately 25 mm from the midline and a 10 mm elevation of the upper left orbital rim (Figure 2).



**Figure 1:** Left fronto-ethmoidal mucocele with non-axial proptosis (arrow)



**Figure 2:** CT scan of the mucocele in coronal section.

MRI was not available. The mucocele was removed by endoscopy via the nasal cavity. Intraoperatively, the mucocele cavity was found filled with a yellowish, slimy liquid, the culture of which was sterile on cytobacteriological examination. The mucocele was marsupialized. The postoperative course was straightforward, and the 3-month follow-up was satisfactory, with no recurrence (Figure 3). Patient consent has been obtained for publication.



**Figure 3:** Patient face at 3 months postoperative

## DISCUSSION

Sinus mucoceles are rare, and there are few large series in the literature. Fronto-ethmoidal involvement is the most common, with a frequency of 60% to 96%.<sup>2</sup> The clinical presentation is variable and depends on the location of the mucocele. Complications and extension of fronto-ethmoidal mucocele to the orbit present the most common clinical expression of fronto-ethmoidal mucocele.<sup>1,3</sup> The ocular damage associated with fronto-ethmoidal mucocele is due to compression of the optic nerve, damage to the orbital apex of the cranial nerves, oculomotor paralysis, and damage to the optic chiasm.<sup>4</sup> The most frequently encountered impairment is progressive loss of vision due to compressive optic neuropathy.<sup>5</sup>

In our case, the ocular complications were reduced visual acuity and exophthalmos. Complications such as amaurosis, oculomotor paralysis and visual field impairment have been reported in the literature.<sup>5</sup> This case is typical because of the significant compression of the eye, the large volume of the fronto-ethmoidal mucocele and the deformity of the patient's face. However, advances in imaging techniques (CT and MRI) now allow accurate and early diagnosis, which can sometimes precede the onset of clinical symptoms or complications.<sup>6</sup> Nowadays, particularly in Africa, the

diagnosis of mucoceles is made at an advanced stage when it is associated with serious complications, as in the case of this patient, indicative of late consultation. Patients generally consult us at the stage of facial deformity. Particularly in Africa, the delay in consulting a doctor can be explained by ignorance, the fact that most patients resort to traditional treatment first, and poverty, which limits access to hospitals for better care. Surgery is still the treatment of choice for mucocele. The endonasal endoscopic approach is the reference technique for sinonasal surgery.<sup>7</sup> The introduction of guided endoscopy in endonasal surgery has considerably modified and improved the management of sinonasal pathologies.<sup>8</sup> In our case, we opted for endoscopic endonasal excision of the mucocele. This allowed for extensive marsupialization of the mucocele cavity and good resection of the sinus wall to ensure good drainage and avoid recurrence. It also allowed for satisfactory control of the various procedures, a simple postoperative course, satisfactory return of the orbital region to its anatomical position and left visual acuity estimated at 7/10. Extensive mucoceles usually return to their anatomical position within minutes or hours of surgery. Apart from the operative complications inherent to all surgeries in this region, the specific complication is a recurrence of the mucocele. In this case, the follow-up was 3 months without recurrence. According to Devary du Mayne et al.,<sup>3</sup> the follow-up period was at least 4 years, which does not seem long enough to judge the evolution of our case, as mucoceles of the paranasal sinuses can recur several years after surgery. This short post-operative follow-up sometimes shows how difficult it is to monitor patients in Africa, as once they have been operated on, they disappear and do not return for post-operative check-ups.<sup>9</sup> The risks of recurrence are well established. Depending on the author, the recurrence rate varies from 3% to 35%.<sup>10,11</sup> In all cases, monitoring should be as prolonged as possible to detect recurrence of sinonasal mucoceles.

**CONCLUSION:** Mucoceles of the sinuses are rare, benign conditions with a progressive course, frequently revealing signs of compression of the neighbouring structures with possible functional repercussions. Endoscopic endonasal surgery is the best approach for surgical removal.

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