

Unilateral Fungal Sphenoiditis Presenting with Diplopia and Ptosis

M. Stavrakas¹ · P. D. Karkos¹ · S. Dova¹ · S.-E. Tzorakoleftheraki²

Received: 2 August 2016 / Accepted: 24 April 2017 / Published online: 26 April 2017
© Association of Otolaryngologists of India 2017

Keywords Unilateral sphenoiditis · Occipital headache · FESS · Fungal sinusitis

Unilateral sphenoiditis represents a diagnostic challenge, as it gives vague symptoms and is frequently identified incidentally. It is a rather rare entity and its treatment remains a matter of dispute [1]. When it comes to fungal sinusitis, suspicion, early intervention and close monitoring are essential for effective treatment [3].

A generally fit and well 63-year-old lady presented to her family doctor complaining about retro-orbital headache and mucopurulent discharge. She was initially treated as having a common cold. Later on, the patient developed double vision and ptosis on the right eye. She was subsequently referred to our department for further investigations and definite treatment. On clinical examination, she complained about persistent nasal congestion and mucopurulent discharge. Headache and ophthalmological symptoms deteriorated over the time. Flexible nasendoscopy revealed mucopurulent discharge coming from the sphenoidal recess. Ophthalmology review confirmed right oculomotor nerve palsy while CT scan showed complete opacification of the right sphenoid sinus and thickening of the sinus walls (Fig. 1). She was started empirically on intravenous broad spectrum antibiotics with

no significant clinical improvement. The patient underwent endoscopic sinus surgery, during which the surgeon identified debris coming out of the widened sphenoid ostium. Histological evaluation of the specimen showed nonseptate fungal colonies accompanied by cellular debris and numerous neutrophils (Fig. 2a, b). The patient was under regular follow up for 6 months, and no recurrence was noted. Endoscopic evaluation of the nose was unremarkable and the ocular symptoms eventually improved.

The most prevalent symptom of sphenoiditis is retro-orbital or occipital headache, followed by visual changes. Visual changes include decreased visual acuity and/or oculomotor dysfunction. Other symptoms include nasal congestion and mucopurulent discharge [1, 2]. Although visual disturbance occurs mainly due to neoplastic lesions, it is also found in inflammatory disease. Nasendoscopy is mandatory in assessing the nasal cavity and the sphenoid sinus ostium. Regular ophthalmologic assessment should be obtained in visual acuity deterioration and oculomotor nerve involvement. CT scan with 3 mm axial and coronal cuts is indicated in all suspected cases. It helps to delineate the extent of the disease and possible erosion of the osseous structures [1]. More specifically, in fungal sphenoiditis, an early sign is severe unilateral mucosal inflammation while bone erosion occurs in later stages. Other common CT findings may be soft tissue thickening, sinus mucoperiosteal thickening and opacification. Intravenous contrast is not always required, although it can delineate dural or orbital involvement [3]. MRI is superior in differentiating tumors from secretions. It is preferred in cases of suspected extrasinus spread, intracranial involvement and vascular invasion [1]. An important adjunct in the diagnosis of fungal sinusitis is biopsy [3]. Systemic antifungal treatment is administered mainly in immunosuppressed and neutropenic patients prior to surgical management [3]. Definite

✉ M. Stavrakas
mstavrakas@doctors.org.uk

¹ Department of Otorhinolaryngology - Head and Neck Surgery, AHEPA University Hospital, S. Kiriakidi 1, 54621 Thessaloniki, Greece

² Department of Pathology, Faculty of Medicine, Aristotle University, Thessaloniki, Greece

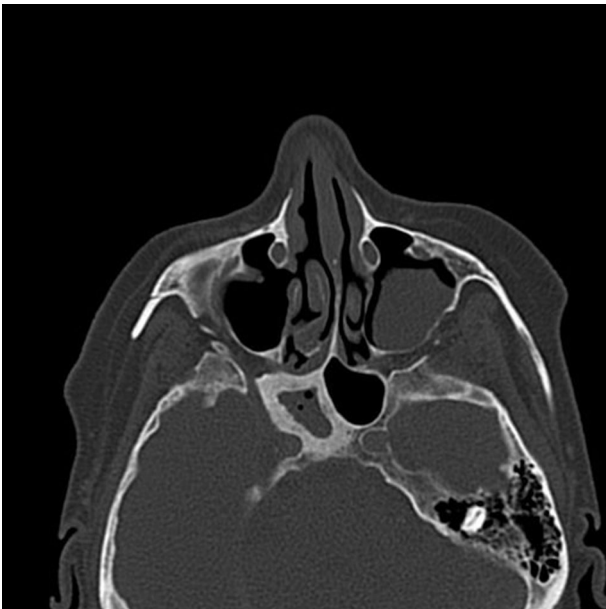


Fig. 1 CT head-axial cut. The *right* sphenoid sinus walls present thickened. Sphenoid sinus opacification with double density content is also visible

surgical treatment is mainly endoscopic sphenoidotomy, including transnasal, transethmoid, transseptal and pterygoid fossa approaches [4]. Endoscopic transnasal sphenoidotomy is considered to be safe and effective for inflammatory disease [5].

To conclude, suspicion of fungal sphenoiditis requires early specialist referral and aggressive treatment. General practitioners and ENT surgeons should be familiar with the signs, symptoms and radiological findings. Surgical drainage is the main treatment and the outcomes are satisfactory after early intervention.

Compliance with Ethical Standards

Conflict of interest No conflicts of interest declared by the authors.

Ethical approval This article does not contain any studies with human participants or animals performed by any of the authors.

Informed consent Informed consent was obtained from all individual participants included in the study.

References

1. Martin TJ, Smith TL, Smith MM, Loehrl TA (2002) Evaluation and surgical management of isolated sphenoid sinus disease. *Arch Otolaryngol* 128(12):1413–1419

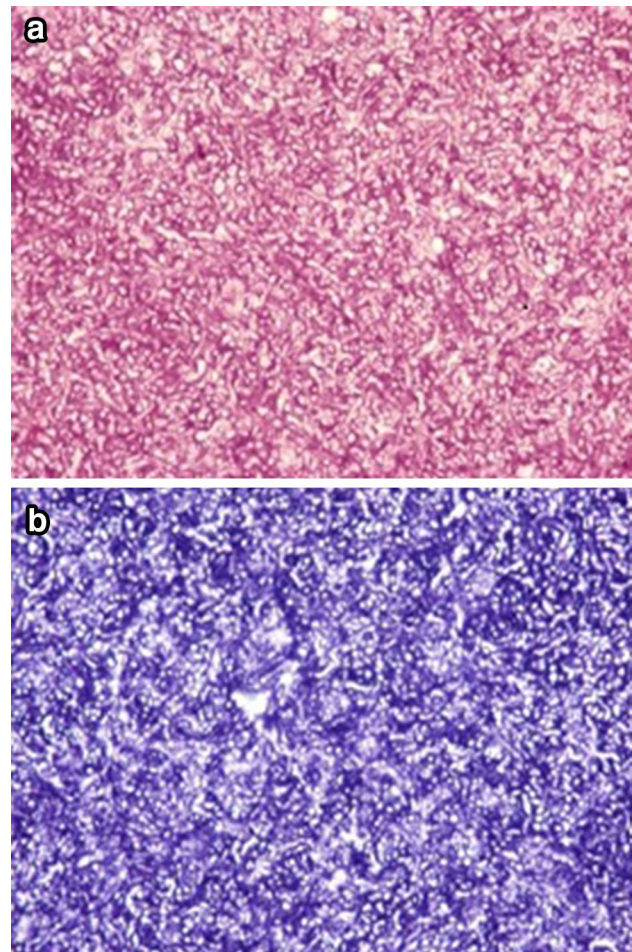


Fig. 2 **a** Ribbon-like fungal hyphae of mucormycosis. (hematoxylin-eosin, $\times 400$). **b** Ribbon-like fungal hyphae of mucormycosis. (Giemsa, $\times 400$)

2. Cakmak O, Shohet MR, Kern EB (2000) Isolated sphenoid sinus lesions. *Am J Rhinol* 14(1):13–19. Retrieved from <http://www.ncbi.nlm.nih.gov/pubmed/10711327>
3. DelGaudio JM, Swain RE, Kingdom T T, Muller S, Hudgins PA (2003) Computed tomographic findings in patients with invasive fungal sinusitis. *Arch Otolaryngol* 129(2):236–40. Retrieved from <http://www.ncbi.nlm.nih.gov/pubmed/12578456>
4. Smith TL, Toohill RJ (2002) Loehrl TA Subtleties in endoscopic surgery of the sphenoid sinus. In: Wackym PA, Rice DH, Schaefer SD (eds) *Minimally invasive surgery of the head, neck and cranial base*. Lippincott Williams & Wilkins, Philadelphia, pp 259–269
5. Metson R, Gliklich RE (1996) Endoscopic treatment of sphenoid sinusitis. *Otolaryngol Head Neck* 114(6):736–744. doi: [10.1016/S0194-5998\(96\)70095-5](https://doi.org/10.1016/S0194-5998(96)70095-5)