CASE REPORT
Cystic lesions of the pterygoid process
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Summary
Introduction: Cystic lesions of the pterygoid process are rare: there are only four case reports in PubMed.
Case report: Two new cases (one schwannoma and one cystic lymphangioma) are reported, with clinical, radiological and therapeutic aspects.
Discussion: A literature review presents the semiology, radiology and treatment of cystic lesions of the pterygoid process.
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Introduction
Cystic lesions of the pterygoid process are rare; only four articles appear in the literature [1–4]. Discovery is late, when signs of compression appear. The anatomic complexity of the region usually precludes complete resection.

We report two new cases, one schwannoma and one cystic lymphangioma, as a basis for discussion of differential diagnosis in cystic skull-base lesions.

Case 1
A 26-year-old man with no previous history consulted for left otalgia and headache resisting medical treatment, of several months’ evolution. Nasofibroscopy found arching of the anterior wall of the left sphenoid sinus. MRI (Fig. 1) revealed a cystic lesion of the left pterygoid process, pneumatizing the bone and invading the skull base, pushing the temporal lobe upward. Surgery used an endoscopic approach to the anterior wall of the sphenoid sinus, extending the sphenoidotomy toward the pterygoid process. After cyst evacuation, the residual cavity was filled using glued abdominal fat. Sample analysis found lymph, completing diagnosis. Postoperative course involved 1 month’s slight lymph leakage, spontaneously resolved. Facial neuralgia gradually resolved under simple analgesia. At the time of writing, follow-up was of 2 years.

Case 2
An 85-year-old man without pathologic history consulted for major right nasal obstruction of 3 months’ evolution. Nasofibroscopy found a voluminous lesion involving the posterior ethmoid. CT and MRI found a mass centered on the right pterygoid canal and extending into the pterygopalatine fossa (Fig. 2); the image was compatible with schwannoma of the vidian nerve. The lesion was partially resected on an endonasal approach to relieve the nasal obstruction. Anatomopathology diagnosed cystic schwannoma. At the time of writing, follow-up was of 1 year.

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Discussion

Cystic lesions of the pterygoid process are very rare; only two cases of cystic lymphangiomma, one of cystic schwannoma and one of cholesterol granuloma have been reported in the pterygoid process [1—4].

Such tumors evolve slowly, so that consultation is late. Clinical signs are non-specific: nasal obstruction, rhinorrhea, pain and sometimes seromucous otitis. The patient with cystic lymphangioma [4] presented with isolated nasal obstruction (a 6-cm diameter tumor). The cases of cholesterol granuloma and of cystic schwannoma [2,3,5] were diagnosed on MRI, prescribed during follow-up of a different pathology. The tumor may be revealed in an emergency setting: in one case of cystic lymphangioma [1], this was a context of intratumoral hemorrhage with signs of acute oculomotor nerve compression. In both present cases, the patient consulted for signs related to the tumoral mass: nasal obstruction and pain of several months’ evolution. Differential diagnosis concerns all tumoral lesions originating in the sinonasal cavities. Clinical evolution usually reveals simple displacement of normal nasal mucosa.

Associating CT and MRI reveals the cystic aspect of the lesion and its extensions and relationship with the skull-base foramina (Table 1): enlarged foramina may directly suggest a neural origin. Like in Hackman’s case [2], MRI enabled diagnosis of cystic schwannoma. In the present case, the enlarged pterygoid canal pointed to cystic vidian nerve schwannoma. Cholesterol granuloma usually occurs in the aerated cavities of the temporal bone, although it has also been reported in the facial, including sphenoid, sinuses. Cholesterol granuloma of the pterygoid process [3] shows hypersignal in T1 and T2-weighted sequences. In case of doubt, definitive diagnosis is founded on CT-guided percutaneous biopsy. In serendipitously discovered cholesterol granuloma in an asymptomatic but elderly patient in poor general health, abstention and radiologic surveillance was recommended [5]. Imaging may suggest certain presumptive diagnoses on the basis of radiologic characteristics and lesion location, but only anatomopathology can establish a definitive diagnosis. Endonasal biopsy is thus generally mandatory, if the lesion is not accessible via this route. CT-guided fine-needle aspiration is an alternative to surgical biopsy. The clivus, oval foramen, pterygoid process,
infratemporal fossa and cavernous sinus are approached sub-zygomatically [5]. Fine-needle aspiration allows anatomopathologic diagnosis identical to anatomopathologic analysis of a surgical specimen in 78% of cases. Failure is due either to the specimen being non-interpretable or to difficulty in analyzing the aspirated sample [5]. In such cases, a direct surgical approach to the lesion is required.

Diagnosing mucocele, schwannoma or cholesterol granuloma is usually unproblematic on anatomopathology. Cystic lymphangioma, the osseous form of which is extremely rare, may in contrast be difficult to diagnose; immunohistochemistry using endothelial labeling is then contributive [6]. Biologic analysis of the lymphatic fluid enables definitive diagnosis, as in the first of the present cases.

**Conclusion**

Cystic lesions of the skull base are benign, with slow evolution and clinical signs related to compression of neighboring organs. Imaging, and MRI in particular, guides etiologic diagnosis. Biopsy and/or fine-needle aspiration, however, are required in some cases to determine treatment.

**Disclosure of interest**

The authors declare that they have no conflicts of interest concerning this article.

**References**


