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RESEARCH ARTICLE

SCHWANNOMA OF THE NASAL SEPTUM: A RARE CASE.

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Abstract

Schwannomas are benign tumors originated in the neural crests derived from Schwann cells. It is rarely seen in the nose and paranasal sinuses, and it very rarely originates from the nasal septum. We report the case of a 56 year-old male admitted to the Department of Otolaryngology – Head and Neck Surgery at Avicenna Military Hospital in Marrakesh (Morocco), with the complaint of a progressive left nasal obstruction since the last 9 months. Local examination and rigid endoscopy showed a smooth polypoid lesion completely filling the left nasal fossa, with a pedicle in the posterior septum region. Contrast enhanced computed tomography and magnetic resonance imaging suggested a benign origin. The tumor was completely removed via an endoscopic approach and histopathologic examination revealed a schwannoma.

Introduction:-

Schwannomas are benign tumors that occur from the schwann cells of peripheral nerves (1). 25% are seen in the head and neck region ; of these, only 4% arise from the nose and paranasal sinuses (2,3), developing from ophtalmic or maxillary branches of the trigeminal nerve or from the autonomic nervous system (4). A finding of a schwannoma in the nasal septum is exceedingly rare, as only about 34 such cases have been reported (5,6). The tumor size can be considerable, causing nasal obstruction, pain or focal numbness (7). Due to the lack of radiological characteristic features, the diagnosis of such tumors is only histopathological (4). We report the 35th case of septal schwannoma of the nose, together with a review of the literature focusing on the clinical presentation, differential diagnosis, histology and treatment of this unusual finding.

Case Report:-

A 56-year-old man was referred to our outpatient department with a progressive left nasal obstruction since the last 9 months. He had no history of epistaxis, anosmia, facial pain or allergies. Family history was otherwise unremarkable. A rigid endoscopy revealed a smooth, firm, white-yellow, polypoid mass occupying the left nasal cavity and extending through the left choana into the nasopharynx, with a pedicle in the posterior septum region. Rest of the physical examination was normal.

Computed tomography (CT) of the paranasal sinuses showed a soft-tissue mass (39-45 HU) completely occupying the left nasal cavity and the ipsilatéral maxillary sinus, without displacement of the nasal septum (Fig1 A&B).

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Magnetic resonance imaging (MRI) revealed a mass with hyposignal on T1-weighted image, hypersignal on T1 FS-weighted image and T2-weighted image, measuring 23x16x40mm, occupying the left nasal cavity and reaching the choana. The left maxillary sinus was partially filled by retained secretions (Fig 1 C&D).

The patient was submitted to endoscopic endonasal surgery for diagnostic and therapeutic purposes. The tumor was removed with margins from the posterior septum periosteum. The procedure was uneventful.

Histopathological (Fig2 A&B) and immunohistochemical (Fig2 C&D) examinations confirmed the diagnosis of schwannoma. The patient was free of disease at the endoscopic evaluation 11 months after surgery.

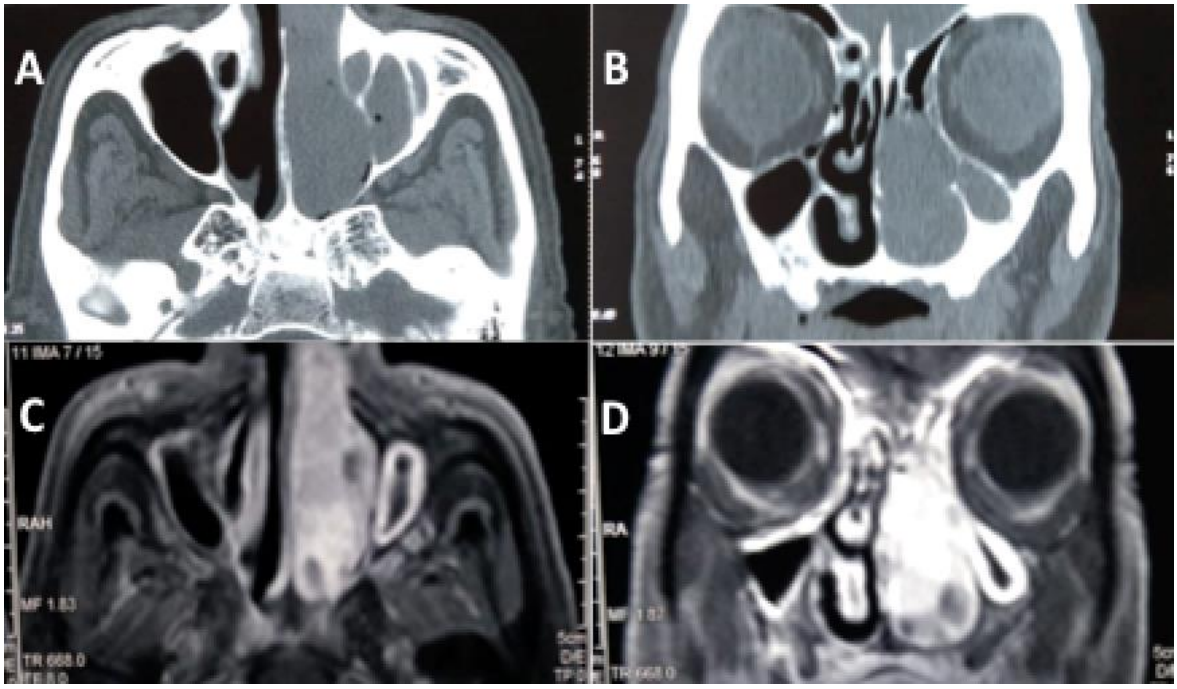

Figure 1:- A (axial view) and **B** (coronal view) : CT scan showing a tumor in the left nasal cavity and maxillary sinus. **C** (T1 FS axial view) and **D** (T1 coronal view) : MRI showing the tumor in the left nasal cavity with retained secretions in the ipsilateral maxillary sinus.

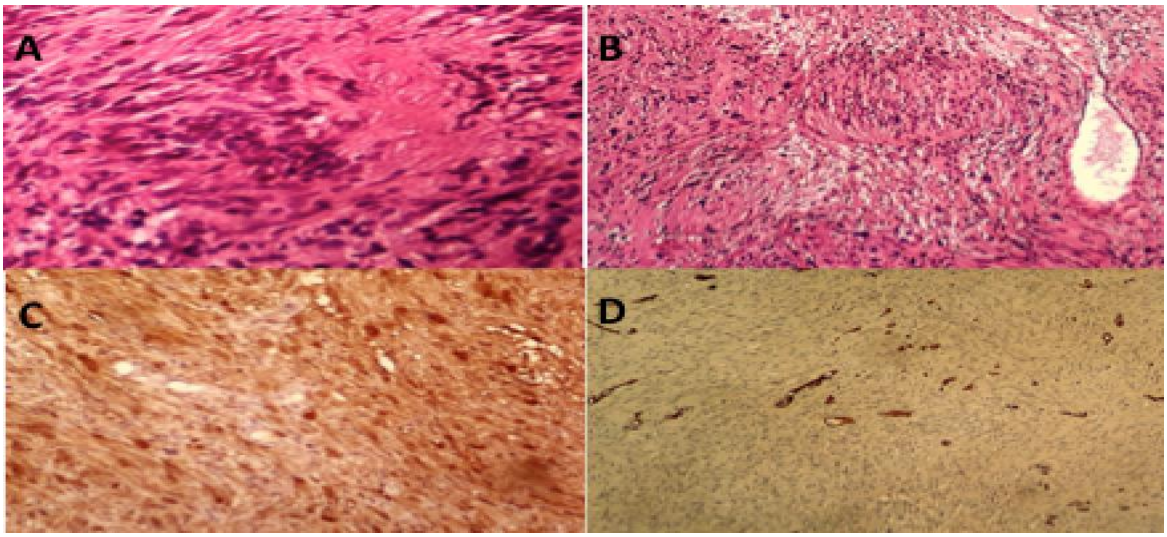

Figure 2:- A (x20) and **B** (x40) : Microscopic appearence of the tumor showing spindle cells proliferation with Antoni A pattern and Antoni B areas with nuclear palisading (heatoxylin-eosine stainung). **C** : S100 protein showing

a diffuse staining as a characteristic feature for schwannoma. **D** :Immunohistochemistry showing CD34 negativity in tumor cells with blood vessels marking.

Discussion:-

Schwannomas are benign encapsulated nerve sheath neoplasms, originating from the Schwann cell of the neural sheath (8). The literature mentions approximately only 70 cases of nose and paranasal sinus schwannomas, mostly seen in adults aged 40-60 years and without gender or racial predilection (6,9). The ethmoid sinus is the most commonly involved location, followed by the maxillary sinus, the nasal cavity, and the sphenoid sinus (4). Those arising from the nasal septum are even rarer ; the first case was described by Bogdasarian and Stout in 1943 (10) and only 34 cases have been reported in the literature (5,6). Schwannomas of the sinonasal tract may develop from branches of tregiminal nerve (ophtalmic or maxillary), parasympathetic nerve (originating from the sphenopalatine ganglion) and sympathetic nerve (which originates from the carotid nerve plexus) (1).

It usually presents with nasal obstruction, anosmia, epistaxis, and deformity of the nasal pyramid (9). Intracranial and orbital extension of disease can lead to orbital and cranial symptoms (8). The differential diagnosis includes a variety of lesions ranging from polyps and angiomas to malignant tumors such as olfactory neuroblastomas and melanomas, making difficult a diagnosis based on clinical results (2). Even CT scan findings are not specific for a schwannoma diagnosis, but they provide information regarding the tumor's origin and extent (4). MRI is helpful in differentiating tumors from inflammatory disorders and evaluating intracranial extension of the tumor (6).

The diagnosis depends on biopsy or complete excision of the mass. As our patient's tumor had a benign aspect, we performed an excisional biopsy which was curative. Histopathologically, schwannomas are composed of spindle cells with biphasic histologic pattern that is characterized by organized hypercellular areas that often display nuclear palisading (Antoni A area) and hypocellular areas without distinct pattern (Antoni B area) (11). Due to the presence of the S-100 protein in central and peripheral nerve cells, its staining may help for the diagnosis if a schwannoma does not show the characteristic histology findings (1,12).

We chose the endoscopic endonasal approach to remove the tumor piecemeal ; which is the current standard surgical approach for tumor removal (6). Advantages include less morbidity and shorter hospital stay (9). Radiotherapy is reserved for patients who are medically unfit to undergo surgery (2). The condition is typically curative with rare postoperative recurrence (6,13).

Closing Remarks:

Schwannomas originating from the nasal septum are very rare. However, it should be considered in the differential diagnosis of patients with unilateral nasal obstruction. Endoscopic endonasal excision of the tumor is a minimally invasive approach that offers a magnified surgical view (which is helpful for delineation of the region of tumor attachment) and provides lower morbidities.

Conflicting interests:

the Authors declares that there is no conflict of interest.

Consent statement:

informed consent has been obtained from the patient for publication of the case report and accompanying images.

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