CASE REPORT

Schwannoma of the nasal septum

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Abstract Schwannomas are benign and slow growing tumors originating from the Schwann cells of peripheral nerve sheath. Schwannomas of sinonasal origin are rare (4%) however septal schwannomas are much more rarer. We presented a 31 year old female patient. At physical examination a pale gray, smooth polypoid lesion obstructing the right nasal cavity was detected. Midfacial degloving and endoscopic approach were combined for surgical treatment. The tumor was originating from posteromedial area of the septal nasal cartilage, close to the bony cartilaginous junction. Postoperative histological examination of the specimen showed a benign tumoral growth consisting of spindle shaped cells and immunohistochemical staining of the tumor proved septal schwannoma.

1. Introduction

Schwannomas are benign and slow growing tumors originating from the Schwann cells of peripheral nerve sheath. Twenty-five to forty-five percent of the extracranial schwannomas are located at the head and neck region. Among these most common ones are the vestibular schwannomas of internal acoustic meatus. Schwannomas of sinonasal origin are rare (4%) however septal schwannomas are much more rarer.

2. Case presentation

31 year old caucasian female patient presented to Haseki Training and Research Hospital in June 2015. The main symptoms were nasal obstruction, headache, facial pain, anosmia and intermittent bloody nasal discharge. Nasal obstruction started eight months ago and increased in last six months, resulting in headaches, facial pain, anosmia and intermittent bloody nasal discharge eventually. There was no special condition in family history, also no comorbid diseases and trauma history. At physical examination a pale gray, smooth polypoid lesion obstructing the right nasal cavity was detected. Endoscopic examination of the left nasal cavity revealed a septal perforation of 5 x 10 mm at the posterior nasal septum, through which the tumor passed from right to the left nasal cavity.

Computed tomography (CT) (Brilliance CT, Philips, Amsterdam, the Netherlands) of the paranasal sinuses revealed a soft tissue mass expanding and remodeling the superior and...
inferior conchae and the medial wall of the maxillary sinus, leading to the obstruction of right nasal cavity (Fig. 1A and B).

T1-hypointense and T2-hyperintense mass lesion of 47 × 17 mm at right nasal cavity showing postcontrast enhancement was detected by the magnetic resonance imaging (MRI) (Philips Achieva 1.5T, Philips Medical Systems, Best, The Netherlands) of the paranasal sinuses (Figs. 2A–C and 3A and B).

Diagnostic incisional biopsy was performed and with Ki-67, immunohistochemical nuclear staining was 5%. These histopathological findings suggested a benign mesenchymal tumor growth.

Midfacial degloving and endoscopic approach were combined for surgical treatment. The tumor in the right nasal cavity did not invade the surrounding soft tissues and originated from the posteromedial area of the septal nasal cartilage, close to the bony cartilaginous junction. Nasal septal perforation was observed right anterior to this site. Perpendicular plate of the ethmoid bone and septal cartilage near the tumor were excised along with the tumor.

Postoperative histological examination of the specimen showed a benign tumoral growth consisting of spindle shaped cells with round nuclei, arranged in interlacing fascicles nested in histiocyte groups. Immunohistochemical staining for differential diagnosis of the nerve sheath tumors demonstrated vimentin(+), CD68(+) (in histiocytes), CD34(−), SMA(−), Desmin(−), S-100(+), EMA(−), PANC(−) hence the diagnosis was confirmed as schwannoma (Fig. 4).
3. Discussion

Schwannomas are mostly benign tumors deriving from the Schwann cells in periféric nerve sheath. The incidence of malign schwannomas are 2%. Schwannomas may arise from peripheral motor, sensorial, sympathetic nerves and also from cranial nerve sheath.

Twenty-five to forty-five percent of the schwannomas are located at head and neck region. The incidence of schwannomas at sinonasal area is 4% and mostly at ethmoid sinuses followed by maxillary sinuses, nasal cavity and sphenoid sinuses. Schwannomas of nasal septum are extremely rare and there have been approximately 20 patients in western literature.

Usually schwannomas arise from large peripheral nerve fibers such as vestibulocochlear nerve, vagal nerve and cervical sympathetic trunk. However in our case due to the localization of the tumor; it may be considered to derive from small somatosensorial nerve fibers of nasal septum (e.g. nasopalatine or nasociliary nerves).

Slowly increasing nasal obstruction and related symptoms such as nasal/postnasal discharge, intermittent epistaxis and headache are of primary importance in patient history. Large nasal tumors may cause cosmetic problems. In our case nasal obstruction, headache and bloody nasal discharge were the main symptoms.

Unilateral tumoral mass in the right nasal cavity was detected by physical examination and imaging (CT and MRI). No destruction was seen in nearby bony tissues. Remodeling of maxillary sinus medial wall implicated a benign lesion, no orbital or intracranial extension was detected. Fascicular sign, seen at MRI, implies a lesion of neurogenic origin. It is characterized by multiple small ring-like structures with peripheral hyperintensity at T2 intense MRI images. The lesion in our case did not exhibit fascicular sign. MRI is especially valuable for evaluation of the intracranial extension of schwannomas derived from nasoethmoid roof.

Unilateral nasal obstruction is the most common symptom in patients with either benign or malignant tumors of the sinonasal region. In Italy 931 patients with benign nasal masses were evaluated by a multicentered study and inverted papilloma, osteoma and juvenila nasopharyngeal angiofibroma were found to be the most common benign tumors. Nasal schwannoma was seen only at seven patients.

Schwannomas, perineuromas, neurofibromas, myxomas and granular cell tumors are called as peripheral nerve sheath tumors which develop from schwann cells, perineural cells and neural fibroblasts. Differential diagnosis of these tumors are made by immunohistochemical staining. S-100 protein expression is diagnostic for schwannoma; diagnosis was confirmed likewise in our case.

The location and size of the lesion defines the surgical approach. In our case midfacial degloving was preferred due to the size of the tumor and better cosmetic results. After the total excision of schwannoma, posterior nasal cavity was inspected for tumor residue by endoscopic approach. Preoperative complaints of our patient has ceased in two months after the surgery. The follow up is done every two months by nasal endoscopy. No recurrence is detected up to date.

Figure 3  Paranasal sinus MRI sections; A – T2A axial, B – T2A sagittal.

Figure 4  Positive immunohistochemical staining for S-100 protein.
month follow up duration is not adequate we continue the bimonthly follow-ups.

Conflict of interest

There is no conflict of interest.

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References