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RESEARCH ARTICLE

A RARE CASE REPORT- NASAL COLUMELLAR SCHWANNOMA WITH REVIEW OF LITERATURE

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Abstract

Background: Schwannomas are benign tumors, that originate from Schwann cells. Less than 4% of these tumors arise in the sinonasal tract. Columellar involvement is extremely rare.

Case Report: A 16 year old male with 5 months history of bilateral nasal obstruction and swelling in the right nasal cavity presented to our OPD. On physical examination, mass arising from right columellar region associated with hypervascularity observed. The computed tomography revealed heterogenous soft-tissue density in the right anterior nasal cavity. The mass was excised in toto via upper gingivo-buccal incision. An oval, whitish, firm, well-encapsulated mass measuring 2.5×2×1cm was removed. Histopathological examination revealed Antoni A and Antoni B areas. Findings were thereby consistent with the diagnosis of nasal schwannoma. Post-operative course was uneventful.

Discussion: Schwannomas are tumors originating from Schwann cells and can occur in various locations, including the head and neck region. Sinonasal schwannomas, though rare, can present with symptoms such as nasal obstruction, epistaxis, and facial swelling. Diagnosis relies on histological examination, while imaging helps delineate lesion extent. Treatment typically involves surgical resection, with different approaches based on tumor location. Notably, schwannomas generally have a low recurrence rate, except in cases associated with neurofibromatosis type 2.

Conclusion: Nasal schwannomas are very rare in the sino-nasal tract, however they should be considered as apart of differential diagnosis for nasal masses.

Introduction:-

Schwannomas, also called neurilemmomas, are benign tumours of the nerve sheath. They are relatively common tumours with approximately 25–45% arising from the head and neck region [1]. Sinonasal involvement is uncommon with only 4% of these tumours involving the nasal and paranasal cavity [2]. Columellar involvement is extremely rare. A literature search found only three other published cases of schwannoma involving the columella. We therefore present the 4th documented case of a columellar schwannoma.

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Case presentation

A 16 year old male patient presented to our ENT dept in GIMS tertiary hospital with 5months history of swelling of nasal columella and nasal obstruction. His sense of smell and taste remained intact. There was no history of epistaxis, rhinorrhea or pain.

On examination there was a firm, smooth, non-tender lesion over the columella, with mild telangiectasia of the overlying skin (Fig. 1.). It was felt to be separate from the anterior nasal septum. Diagnostic nasoendoscopy revealed no abnormality within the nasal cavity

A CT scan of nose and PNS showed heterogenous soft-tissue density in the nasal collumella with no obvious bone invasion was observed

The differential diagnosis included were nasolabial cyst or nasal dermoid cyst. The decision to surgically excise this was made based on the recent enlargement and nasal obstruction.

Through sublabial apprroach the mass was excised under general anaesthesia. On complete excision, the mass was found to be well-encapsulated.

Histological examination of the specimen revealed an encapsulated spindle cell neoplasm measuring 2.5*2cm. There were foci of peripheral palisading of the lesional cells, with formation of Verocay bodies. Admixed with the spindle cells and frequent small to medium diameter blood vessels with hyalinised walls. There was little cytological atypia, no atypical forms and no necrosis found. The overall picture was that of a benign peripheral nerve sheath tumour, mostly suggestive of a classic schwannoma

Recovery following the surgery was uneventful with satisfactory cosmetic outcome.

Followup after 1 and half years showed a mass of 2×2cm at the same location. CT scan and FNAC pointed towards recurrence. Sublabial approach was opted and the HPR revealed features of schwannoma.

Discussion:-

Schwannomas were first described by Verocay in 1908.It is a tumor that originates from the neuroectodermal Schwann cells of the cranial, peripheral, or autonomic nerve sheaths. Head and neck schwannomas could arise from multiple sites and account for 25% to 45% of all cases. Depending on the location, it is divided into nonvestibular, extracranial head and neck schwannomas and less commonly, intracranial acoustic schwannomas. Sinonasal schwannomas are rare and account only for 4% of all head and neck schwannomas. In line with these reports, Habesoglu et al reported that unilateral nasal symptoms could be attributed to neoplastic diseases (20.6%), inflammatory diseases (68.3%), and anatomic variations (11.1%). Among neoplastic diseases, inverted papilloma (6.3%) was the most common pathologic diagnosis. Schwannoma, ameloblastoma, pleomorphic adenoma, non-Hodgkin lymphoma, and squamous cell carcinoma were the least common findings (1.6%)[3]. Symptoms of sinonasal schwannoma vary with the location of the tumour, whether in the external nose or presenting in the nasal cavity. Most common symptoms are nasal obstruction, but they may also present with epistaxis, mucopurulent rhinorrhea, anosmia, facial swelling, ptosis, headache, or pain. Apart from columellar involvement, schwannomas have also been reported to occur in the nasal tip or the anterior nasal septum, where the treatment approaches may be similar.

A definitive diagnosis is made based on the histologic findings. Imaging can be useful to delineate the extent of the lesion; however the features of schwannoma on MRI are not diagnostic.

Microscopically, schwannomas are usually encapsulated and biphasic (highly cellular Antoni A, hypocellular Antoni B areas); they also follow a palisading pattern (Verocay bodies – 2 rows of elongated palisading nuclei alternating with acellular zones). Two case series with a total of 11 patients show that sinonasal schwannomas have an unusual feature of lack of encapsulation and possible ulceration of the epithelial covering, yet without local recurrence or metastasis on long-term follow-up. This was not the case in our patient, and one other case of columellar schwannoma was also reported to be well-encapsulated [4].

There are several subtypes of schwannoma: cellular, pigmented, plexiform and epithelioid. Schwannomas in general have a low recurrence rate of only 2%, and that is usually associated with neurofibromatosis type 2.The nerve of origin for schwannomas of the columella is difficult to determine because of the thin nerve innervation over the nasal cavity, but it is likely to be a branch of the ophthalmic or maxillary divisions of the trigeminal nerve, or from autonomic nerves supplying the vasculature.[5]

Sympathetic nerves come out from the stellate ganglion and are distributed around the septal blood vessels. Parasympathetic nerves from the sphenopalatine ganglion innervate the septal mucous gland. The sensory nerves in the nasal septum originate from the branches of the ophthalmic nerve (anterior ethmoid nerve) and maxillary nerves (nasopalatine nerve). Olfactory groove schwannomas might arise from the olfactory bulb and nerve.

The treatment of choice for schwannoma is resection. Different approaches are used depending on the exact subsite of the tumour. As it is a benign, usually well-encapsulated lesion, disfiguring excisions are unnecessary. For lesions in the columella (or subsites adjacent to the columella e.g. nasal tip), excision with the open rhinoplasty approach (columellar incision) seems to be the ideal surgical method as reported in various cases – it offers good exposure to the nasal cartilage framework, making it easier to perform modification of nasal tip deformities and asymmetry

Conclusion:-

Nasal septum Schwannomas are uncommon occurrences but should be considered one among the differential diagnoses for patients with a unilateral nasal mass. Histopathological examination is the definitive diagnostic method. Endoscopic endonasal excision is the preferred treatment due to its minimally invasive nature, better visualization, reduced complications, shorter hospital stays, and avoidance of external scarring. Additionally, recurrence of schwannomas is extremely rare.

Ethical approval

I declare on my honor that the ethical approval has been exempted by my establishment

Fig 1- clinical picture, note the buldge at the nasal columella

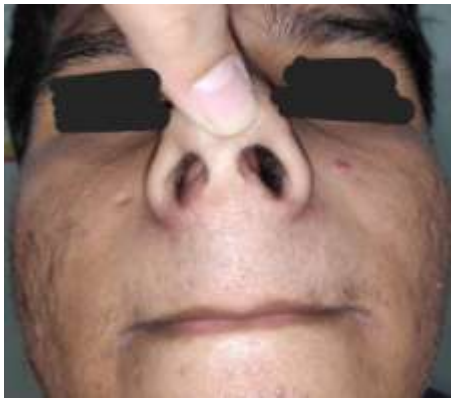

Fig 2:- CT nose and PNS showing heterogenous soft-tissue density in the nasal collumella.

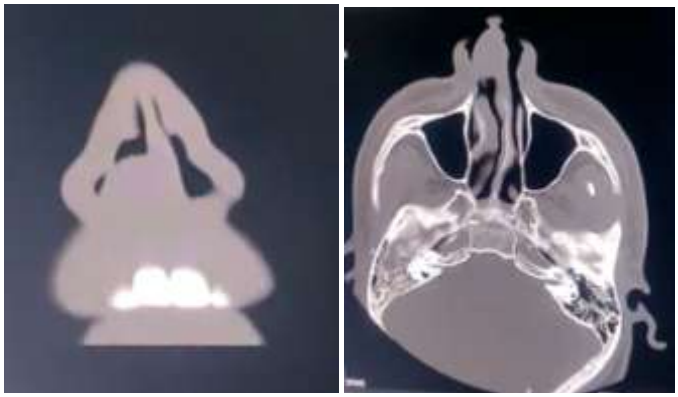

Fig 3:- Intraoperative pic showing encapsulated mass.

Fig 4:- Histopathology showing Areas of hypercellularity(Antoni A) with verocay bodies and areas of hypocellularity (Antoni B).

Consent
Written informed consent was obtained from the patient attenders for publication of this case report and any accompanying images. A copy of the same is available for review by the Editor-in-chief of this journal.

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Authors contribution
Dr Sapthami Satish- corresponding author, writing the paper and operating surgeon
Dr Renuka S Melkundi- writing the paper and operating surgeon
Dr Siddaram Patil- study concept and operating surgeon
Dr Vasim Patel- study concept.

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Not Applicable.

Conflict of interest
The authors declare having no conflicts of interest for this article.

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