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Benign Fibrous Histeocytoma in the Nose - A Rare Observation

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***Abstract*—*The mesenchymal growth known as benign fibrous histiocytoma is mainly found in the dermis of the limbs. It is quite uncommon for it to manifest in the upper aerodigestive tract, especially in the sinonasal cavities, and it presents serious diagnostic difficulties. We describe in great detail a 40-year-old man who had intermittent epistaxis and increasing, left nasal blockage. A well-defined polypoid tumour inside the right nasal vestibule that extended to the anterior nasal septum was discovered upon physical examination. The procedure was endoscopic endonasal resection. Histopathological analysis revealed a traditional dual cell population comprising histiocyte-like cells and spindle-shaped fibroblasts grouped in a distinctive storiform (mat-like) architecture, interspersed with multinucleated giant cells of the Touton type and persistent inflammatory infiltrates. A conclusive diagnosis of BFH was established by immunohistochemical (IHC) profiling, which revealed significant positivity for Vimentin and CD68 and negativity for S100, SMA, desmin, and pan-cytokeratin*.

I. Introduction

A frequent benign tumour of the soft tissues [(1)], benign fibrous histeocytoma is often commonly referred to as dermatofibroma when it is limited to the cutaneous tissue. Although cutaneous forms are common, less than 1% of cases are deep soft tissue or mucosal Benign Fibrous Histeocytoma, and head and neck localisations are clinically uncommon [(2)]. Due to clinical and radiological similarities with more aggressive neoplasms, such as inverted papillomas, low-grade fibrosarcomas, solitary fibrous tumours (SFT), and leiomyosarcomas [(3)], these lesions within the sinonasal tract are prone to misinterpretation. Expanding our knowledge of mesenchymal sinonasal tumours and improving standard diagnostic methods depend on the documentation of localised sinonasal Benign Fibrous Histeocytoma. IHC-based morphological study to differentiate Benign Fibrous Histeocytoma from mesenchymal sinonasal mimics [(4)].

II. Clinical Aspect

2.1 Case Presentation

A 40-year-old man with a 4-month history of progressive, left-sided unilateral nasal airway obstruction at the otorhinolaryngology clinic. He had no relevant prior medical history. Over the previous two months, the patient had recurring, low-volume, self-limiting epistaxis from the left nostril along with a persistent feeling of fullness in the anterior nasal cavity. He denied experiencing any visual problems, headaches, anosmia, facial pain, or constitutional symptoms like fever, night sweats, or inexplicable weight loss. In addition to not smoking and not being exposed to wood dust or heavy chemicals at work, he had no history of endonasal surgery, chronic rhinosinusitis, or local trauma.

2.2 Endoscopic and Physical Examination

A hard, non-friable, clearly defined polypoid mass of roughly 2.5 cm was discovered by anterior rhinoscopy and flexible nasal endoscopy. The mass stretched along the floor toward the anterior portion of the nasal septum, starting at the soft tissue of the left lateral nasal vestibule. The mucosa on top was pinkish-red and mostly unbroken, with some areas of hypervascularity but no obvious ulcers, necrosis, or open purulent discharge. The cartilaginous nasal septum deviated to the right due to the lesion's total occlusion of the left nasal valve region. A comprehensive cervical examination revealed no evidence of regional lymphadenopathy.

2.3 Radiology

Maxillofacial Computed Tomography (CT) Radiological Assessment: showed that the left anterior nasal cavity contained a uniform, well-defined soft-tissue density mass. Importantly, neither the nasal bones nor the surrounding bony nasal septum showed signs of severe bone erosion, remodelling, or disintegration. The maxillary, ethmoid, frontal, and sphenoid paranasal sinuses were all clean and well-ventilated. MRI, or magnetic resonance imaging: carried out to accurately define the borders of soft tissues

The mass showed heterogeneous, intermediate-to-low T2-weighted signal intensity as well as intermediate T1-weighted signal intensity. The lesion showed strong, comparatively homogeneous enhancement after intravenous gadolinium contrast was administered. There was no evidence of cerebral invasion or expansion into the orbital structures.

2.4 Therapeutic Intervention

A full excisional biopsy using an endonasal endoscopic technique was planned due to the symptomatic airway obstruction and the uncertain etiology of the mesenchymal tumour. The mass was excised widely locally while under general anaesthesia. It was discovered that the tumour was firmly attached to the perichondrium of the anterior septum and the subcutaneous tissue of the nasal vestibule. A close but distinct 2-millimeter margin of healthy mucosa was present after the lesion was dissected free. Upon examination, it was discovered that the underlying septal cartilage was completely unaffected. Bipolar electrocoagulation was used to achieve

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haemostasis, and a dissolvable haemostatic matrix was used to line the surgical bed.

III. Histopathological Results

3.1 Gross Pathology

10% neutral buffered formalin was used to accept the material. It was made up of a single, lobulated, well-circumscribed, unencapsulated nodule of firm, fibroelastic tissue that measured 2.5 cm by 1.8 cm by 1.5 cm. The mucosal surface on the outside was grayish-white and smooth. A firm, homogenous, tan-white to ochre cut surface with focal, small hemorrhagic pinpoints was seen when the mass was sectioned; nevertheless, there were no macroscopic areas of global necrosis or cystic degeneration. Figure (1)

Figure 1: Well- circumscribed, tan- white nodule with focal area of hemorrhage

3.2 Microscopic Histopathology

Haematoxylin and Eosin (H&E) staining was applied to many sections after they were processed and fixed in paraffin. Microscopic analysis revealed an intact, hyperplastic pseudostratified cliated columnar epithelium underlying a highly cellular, unencapsulated mesenchymal proliferation inside the submucosa. The basal layer of the epithelium and the upper border of the tumour were divided by a thin, uninvolved "Grenz zone" of collagen. The following particular cellular and architectural features were present in the tumour matrix:

The composition of cells: A notable dual-population of rounded or polygonal histiocyte-like cells with abundant, pale, pale-eosinophilic, and focally vacuolated (foamy) cytoplasm mixed closely with elongated, thin, spindle-shaped cells that morphologically resemble fibroblasts/myofibroblasts. Architectural Configuration: A clear, noticeable storiform (mat-like or cartwheel) pattern was produced by the arrangement of the spindle cell component in short, crossing fascicles. The cells whirled around tiny vascular channels or collagen focal points. Inflammatory Infiltrate and Giant Cells: Numerous multinucleated large cells, including the characteristic Touton giant cells with a ring of nuclei around a center homogenous cytoplasm with a foamy peripheral rim, were dispersed throughout the stroma. The lesion was covered in a mild, persistent inflammatory cell infiltration made up of mature lymphocytes, plasma cells, and lipid-laden macrophages (xanthoma cells).

Vascularity and Atypia: A complex, delicate network of capillary-sized blood capillaries was visible in the lesion. Atypical mitotic figures, nuclear hyperchromasia, and cellular pleomorphism were completely absent. At less than 1 per 10 high-power fields (HPFs), mitotic activity was incredibly low. There was no perineural or vascular invasion or necrosis. Figures (2)(3)(4)(5)

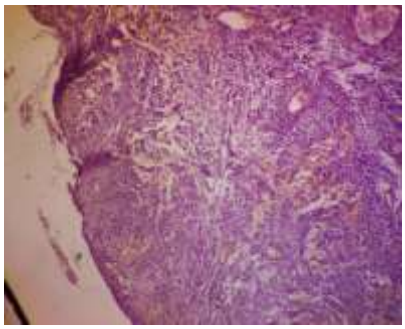

Figure 2: Giant cells and staghorn blood vessels

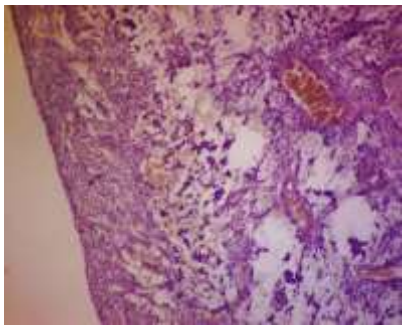

Figure 3: well circumscribed nodule with staghorn blood vessels

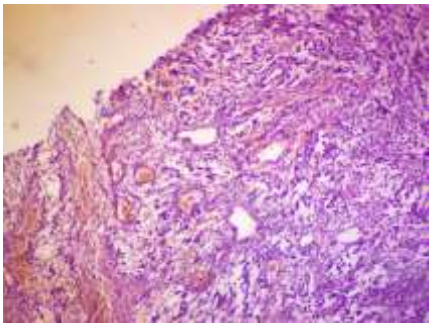

Figure 4: storiform pattern with appearance of Grenz zone

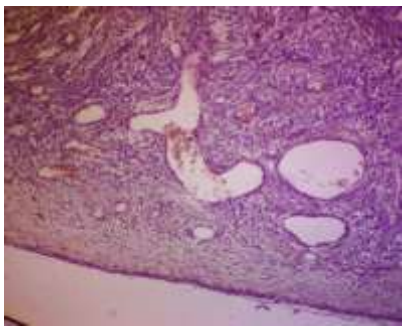

Figure 5: staghorn blood vessels and spindle shape cells

3.3 Analysis of Immunohistochemistry (IHC)

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An thorough immunohistochemistry panel was undertaken in order to rule out soft-tissue cancers of the sinonasal canal that were morphologically comparable. The expression profiles of the tumour cells were as follows:

Vimentin: Strongly Positive (Diffuse), Confirms mesenchymal origin of the lesion. CD68: Strongly Positive, Confirms the presence of the prominent histiocytic/xanthomatous component

Factor XIIIa: Positive (Focal to patchy), Supports the diagnosis of dermal/submucosal fibrous histiocytoma.

S100 Protein: Negative**,** Excludes tumours of neural or melanocytic lineage (e.g., Schwannoma, Melanoma).

Desmin**:** Negative, Excludes skeletal and smooth muscle differentiation.

CD34**:** Negative, Excludes Dermatofibrosarcoma Protuberans (DFSP) and Solitary Fibrous Tumor.

Final Pathological Diagnosis: Left Nasal Mass Biopsy: Nasal vestibule and mucosal benign fibrous histeocytoma. Clear margins and total excision were accomplished.

IV. Discussion and Differential Diagnosis

Since these tumours are typically cutaneous [(2)], benign fibrous histeocytoma involving the sinonasal cavity is an exceptional clinical entity. Because the sinonasal tract has a variety of spindle cell lesions, they test the boundaries of histological interpretation when they manifest in mucosal areas [(5)]. The following are the main differential diagnoses that need to be carefully considered:

1. Dermatofibrosarcoma Protuberans (DFSP): A very infiltrative "honeycomb" growth pattern into surrounding fat/soft tissues, a more homogeneous, monotonous spindle cell population, and—most importantly—a diffuse, strong positivity for CD34, which is completely negative in BFH.
2. A "patternless pattern" of spindle cells, alternating hypercellular and hypocellular zones, and a characteristic hemangiopericytoma-like (staghorn) vascular architecture are characteristics of solitary fibrous tumours. Diffuse CD34 and STAT6 nuclear positivity characterise Solitary Fibrous Tumor.
3. Sinonasal Schwannoma: Verocay bodies are seen in alternating Antoni A and B sections. In contrast to BFH, which is S100-negative, Schwannomas exhibit strong, diffuse S100 and SOX10 positive [(6)].
4. Malignant Fibrous Histeocytoma (MFH/Pleomorphic Undifferentiated Sarcoma): This type of tumour exhibits distinct cellular pleomorphism, unusual multinucleated tumour giant cells, numerous abnormal mitotic figures, and geographic zones of tumour necrosis—all of which are incompatible with a Benign fibrous histocytoma diagnosis [(7)].

Complete surgical excision with distinct margins is necessary for the treatment of sinonasal Benign fibrous histeocytoma [(3)]. Although distant metastasis does not happen, inadequate margins may result in local recurrence due to the unencapsulated nature of these lesions [(5)]. For this benign procedure, radiation and chemotherapy are completely prohibited [(6)].

V. Conclusion

Benign fibrous histeocytoma should be considered in the differential diagnosis of unilateral nasal tumors, despite it is rarity.

In order to guarantee proper surgical management, an accurate diagnosis depends on the combination of distinctive "storiform" histology and a particular immunohistochemistry profile.

References

[1]. Akpınar, M. (2015). Aneurysmal fibrous histiocytoma in nasal vestibule mucosa. Istanbul Medical Journal, 16(2), 80–82.
[2]. Sharifi, M., & Tafaghodi Yousefi, B. (2021). Fibrous histiocytoma of anterior ethmoidal sinus: Case report and review of the literature. Case Reports in Oncology, 14(2), 1304–1309. https://doi.org/10.1159/000518682
[3]. Porwal, P. K., Singh Chauhan, J. P., Kumar, A., Thakur, R. K., Mittal, K., & Singh, H. (2020). Benign fibrous histiocytoma of the maxilla: A rare case report and literature review. National Journal of Maxillofacial Surgery, 11(2), 298–301. https://doi.org/10.4103/njms.njms_85_18
[4]. Pandey, G., Varadharajan, K., Konstantinidou, S., & Hartley, B. (2021). Fibrous histiocytoma of the nose in an 8-year-old girl. *BMJ Case Reports, 14(4), Article e242010. https://doi.org/10.1136/bcr-2021-242010
[5]. Rajathi, P., Jacob, M., Priyadharshini, I., & Sekar, B. (2013). Benign fibrous histiocytoma of the gingiva. Journal of Pharmacy and Bioallied Sciences, 5(Suppl 2), S166–S168. https://doi.org/10.4103/0975-7406.114324
[6]. Prisse, L. A., Jayasooriya, P. R., Mendis, B. R. R. N., & Lombardi, T. (2015). Benign fibrous histiocytomas of the oral mucosa: Report on three cases and review of the literature. Dermatopathology, 2(1), 52–60. https://doi.org/10.1159/000381618
[7]. Prasanna Kumar, D., Umesh, Rathi, T., & Jain, V. (2014). Benign fibrous histiocytoma: A rare case report and literature review. Journal of Maxillofacial and Oral Surgery, 15(1), 116–120. https://doi.org/10.1007/s12663-014-0721-x