ORIGINAL RESEARCH PAPER

Otorhinolaryngology

AN UNUSUAL NASAL TIP SWELLING: A CASE REPORT OF SOLITARY NEUROFIBROMA

KEY WORDS:

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ABSTRACT

Neurofibromas are benign tumors of the peripheral nerve sheath that can develop alone or in conjunction with type 1 neurofibromatosis. Because they resemble other benign nasal masses, solitary neurofibromas of the nasal tip are extremely uncommon and may manifest as a slow-growing, painless swelling that makes diagnosis difficult. We describe the case of an 18-year-old male who had a painless, steadily growing ovoid growth above the tip of his nose. Clinical examination revealed no evidence of neurofibromatosis or intranasal involvement. Complete surgical excision was performed under general anesthesia. The diagnosis of neurofibroma was confirmed by histopathological investigation, which showed an ill-defined spindle cell neoplasm organized in interlacing fascicles with bland elongated, kinked nuclei and eosinophilic cytoplasm. With a favorable cosmetic result and no signs of recurrence at follow-up, the postoperative phase was uneventful. This case illustrates the significance of taking neurofibroma into account when establishing a differential diagnosis of nasal tip tumors and emphasizes the need for full surgical excision with histological confirmation for a conclusive diagnosis and course of treatment.

INTRODUCTION

Neurofibromas are benign peripheral nerve sheath tumors composed of Schwann cells, perineural cells, fibroblasts, and axons[1]. In general, there are two subtypes of neurofibromas: dermal and plexiform. Plexiform tumors can arise internally and are linked to numerous nerve bundles, whereas the former subtype is typically associated with a single peripheral nerve in the integumentary system. Malignant transformation of plexiform tumors is uncommon [2]. Patients with neurofibromatosis, an autosomal dominant condition, typically have neurofibromas. Neurofibromatosis exists in two forms: type 1 (von Recklinghausen disease), which is more prevalent, and type 2, which usually progresses more severely because of tumors in the central nervous system [3,4]. Solitary neurofibromas can occur independently, without any association with neurofibromatosis. Although they most commonly arise in the gastrointestinal tract, their occurrence at other anatomical sites has been reported only rarely [5,6].

Rare, solitary neurofibromas of the nose typically appear as slow-growing, painless masses that may cause nasal obstruction or, less frequently, cosmetic disfigurement. Due to their uncommon location and nonspecific clinical presentation, they can be mistaken for other benign soft tissue lesions. Histopathological examination remains the gold standard for diagnosis. Complete surgical excision is the treatment of choice and is associated with an excellent prognosis with a low risk of recurrence [7]. We report a rare case of a solitary neurofibroma arising from the tip of the nose in a young male.

Case Report

A male 18-year-old patient presented at the otorhinolaryngology outpatient department with a five-year history of painless swelling above the tip of his nose. The swelling started slowly and progressed to about 2X2 centimetres over time. There was no history of pain, discharge, bleeding, trauma, or any aggravating or relieving factors. The patient did not have a family history of neurofibromatosis or other genetic illnesses, nor did they have any similar concerns in the past.

Local Examination

A general physical examination revealed that the patient was well-nourished, medium built, conscious, cooperative, and well oriented to time, place, and people. An ovoid swelling around the tip of the nose was discovered upon local examination. Bilateral nasal cavities were adequate, the nasal septum was central, and the nasal mucosa appeared normal without discharge or crusting. There was no palpable cervical lymphadenopathy, and the examination of the mouth, throat, ears, and neck revealed unremarkable findings.

Figure 1: Photograph Showing an Ovoid Swelling Around the Tip of the Nose

Histopathological Findings and Diagnosis

The patient underwent complete excision biopsy of the lesion under general anesthesia. Grossly, the lesion was excised in toto and sent for histopathological examination. Microscopy revealed an ill-defined neoplasm composed of spindle cells arranged in interlacing fascicles. The individual cells exhibited bland oval to elongated, kinked nuclei with abundant eosinophilic cytoplasm. The intervening stroma showed areas of hemorrhage and mild chronic inflammatory cell infiltrate. No granulomas or features of malignancy were identified. Based on these characteristic histopathological findings, a diagnosis of solitary neurofibroma of the nasal tip was established.

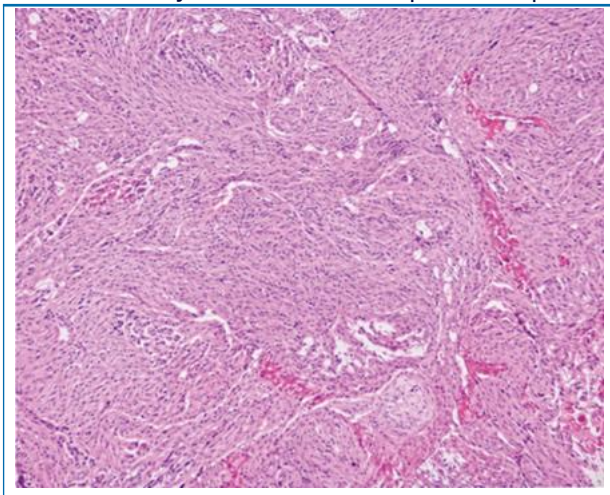

Figure 2: Hematoxylin and Eosin (H&E) Stain Showing an ill-defined Spindle Cell Neoplasm Arranged in Interlacing Fascicles with Bland Elongated, Kinked Nuclei, Abundant Eosinophilic Cytoplasm, and Focal Stromal Hemorrhage with Mild Chronic Inflammatory Infiltrate, Consistent with Neurofibroma.

Operative and Post-operative Findings

The patient recovered well after total surgical excision, and the postoperative phase was uneventful. Even though the prognosis after complete removal of a solitary neurofibroma is usually excellent, regular follow-up was recommended to monitor for local recurrence.

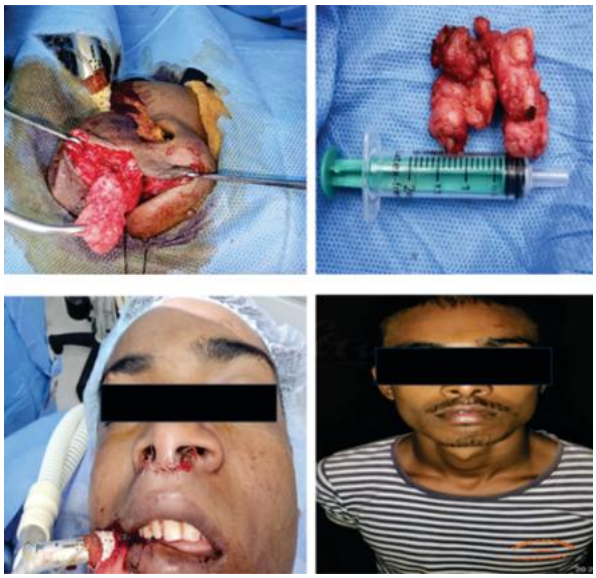

Figure 3: Clinical and Operative Photographs of a Solitary Neurofibroma of the Nasal Tip. (A) Intraoperative View Showing Exposure and Excision of the Nasal Tip Mass. (B) Gross Specimen of the Excised Tumor Measuring Approximately 2 × 2 cm. (C) Immediate Postoperative Appearance Following Wound Closure. (D) Post-operative Photograph At Follow-up Demonstrating Satisfactory Cosmetic Outcome After Complete Excision of the Lesion.

DISCUSSION

Due to the very poor distribution of peripheral nerve tissue in such a region, solitary neurofibromas involving the external nose are relatively uncommon. About 25% to 45% of these tumors develop in the head and neck region, although they are most frequently discovered in the skin and subcutaneous tissues. But just 4% affect the paranasal sinuses and nasal cavity[8, 9]. They are often misidentified with other benign soft tissue lesions such dermoid cysts, epidermoid cysts, lipomas, fibromas, hemangiomas, or adnexal tumors because to their rarity and nonspecific presentation[10,11]. In the nose and paranasal sinuses, neurofibromas arise from autonomic nerve plexuses or the ophthalmic and maxillary divisions of the trigeminal nerve. As the olfactory nerve lacks Schwann cells, it does not give rise to these tumors[12]. Although benign, neurofibromas may enlarge considerably, causing displacement and compression of adjacent structures, including bone remodeling or erosion. Their clinical presentation depends on the tumor location and the surrounding structures involved.

A slowly growing, painless tumor that gradually results in cosmetic deformity rather than functional impairment is the normal presentation for patients with solitary nasal neurofibroma. Unless the lesion expands into the nasal cavity or compresses nearby structures, nasal obstruction, epistaxis, or discomfort are rare. In the present case, the patient was an 18-year-old male with a painless swelling over the tip of the nose that had gradually increased in size over five years without associated nasal symptoms. The diagnosis of an isolated solitary neurofibroma was supported by the absence of any personal or family history suggestive of neurofibromatosis.

A nasal tip mass has a wide differential diagnosis that encompasses both benign and malignant lesions. While rare malignant tumors like sarcomas and basal cell carcinoma can also manifest as nasal masses, benign entities such dermoid cysts, epidermoid cysts, sebaceous cysts, fibromas, lipomas, schwannomas, and vascular lesions should be taken into consideration. Histopathological analysis after excision is necessary for a reliable diagnosis because clinical examination is frequently insufficient to differentiate these lesions[13,14].

Unencapsulated proliferations of bland spindle cells with elongated, wavy, or kinked nuclei contained within a collagenous or myxoid stroma are the histological hallmark of neurofibromas. The tumor usually contains different amounts of Schwann cells, fibroblasts, and axons and infiltrates the surrounding connective tissue[15]. Microscopic analysis of the current case revealed an ill-defined spindle cell neoplasm arranged in interlacing fascicles with bland oval to elongated kinked nuclei, a large amount of eosinophilic cytoplasm, focal stromal hemorrhage, and a mild chronic inflammatory infiltrate that showed no signs of granulomas or cancer. These results were typical of a benign neurofibroma.

For isolated neurofibromas, complete surgical excision is still the preferred course of treatment. The main goal is to remove the lesion completely while maintaining surrounding normal tissue and producing a satisfactory cosmetic result, especially in places that are sensitive to appearance like the nose. Our patient underwent complete excision of the lesion under general anesthesia with satisfactory postoperative healing and cosmetic appearance.

CONCLUSION

This case highlights the importance of considering neurofibroma in the differential diagnosis of slowly growing, painless nasal tip masses in young adults. In addition to establishing the diagnosis, early detection and thorough surgical excision offer a conclusive course of treatment with superior functional and cosmetic results. Due to the entity's rarity, describing such cases adds to the body of knowledge and raises awareness of this uncommon presentation among pathologists, plastic surgeons, and otorhinolaryngologists.

REFERENCES

1. Ferner RE, O'Doherty MJ. Neurofibroma and schwannoma. Curr Opin Neurol. 2002 Dec;15(6):679-84.
2. Muir D, Neubauer D, Lim IT, Yachnis AT, Wallace MR. Tumorigenic properties of neurofibromin-deficient neurofibroma Schwann cells. Am J Pathol. 2001 Feb;158(2):501-13.
3. Goutagny S, Kalamarides M. Meningiomas and neurofibromatosis. J Neurooncol. 2010 Sep;99(3):341-7.

4. Sharma SB, Hong P. Solitary neurofibroma of the frontal sinus. Case Rep Otolaryngol. 2012;2012:373808.
5. Tsai PJ, Liu KY, Wang SE, Shyr YM, Su CH, Chen TH. Solitary neurofibroma of the pancreas body not associated with type 1 neurofibromatosis. J Chin Med Assoc. 2012 Mar;75(3):132-5.
6. Hindy P, Parvin R, Hanna K, Andrawes S, Gress F, Goodman A. An isolated neurofibromal polyp of the colon. Case Rep Gastroenterol. 2012 Jan;6(1):58-62.
7. Biswas D, Mal R. Bilateral solitary maxillary sinus neurofibroma. Ear Nose Throat J. 2010 Jan;89(1):E1-2.
8. Prakash MD, Borlingegowda V. A Rare Case of Isolated Nasal Neurofibroma Mimicking Sinonasal Polyp. Research in Otolaryngology. 2014: 3(3): 49-51
9. Rabhi MA, Bouchlarhem S, Sbai AA, Benfadil D, Lachkar A, Ayoubi El Idrissi FE. Isolated neurofibroma of the nasal vestibule: A rare case of the myxoid subtype and imaging-based differential diagnosis. Radiol Case Rep. 2025 Aug 13;20(11):5550-5554.
10. Fu YS, Perzin KH. Non-epithelial tumors of the nasal cavity, paranasal sinuses, and nasopharynx: A clinicopathologic study. I. General features and vascular tumors. Cancer 1974; 33(5): 1275-88.
11. Abdollahi-Fakhim S, Rezaeian S, Hosseinpour-Feizi H, Naghavi-Behzad M, Piri R. A case of solitary neurofibroma in outer surface of nose. J Anal Res Clin Med 2016; 4(4): 233-7
12. Alwan S, Tredwell SJ, Friedman JM. Is osseous dysplasia a primary feature of neurofibromatosis 1 (NF1)? Clin Genet. 2005 May;67(5):378-90.
13. Kim YD, Bai CH, Suh JS, Song KW. Transnasal endoscopic excision of an isolated neurofibroma of the nasal septum. Rhinology. 1997 Jun;35(2):89-91.
14. Tall A, N'diaye C, Diom ES, Thiam I. Solitary neurofibroma originating from the posterior nasal septum: Transnasal endoscopic resection. Eur Ann Otorhinolaryngol Head Neck Dis [Internet]. 2015;132(4):223–225.
15. Nagrani NS, Bhawan J. Histopathological Variants of Cutaneous Neurofibroma: A Compendious Review. Dermatopathology (Basel). 2022 Dec 26;10(1):1-19.