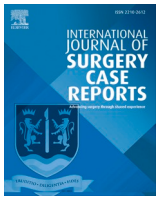
International Journal of Surgery Case Reports 133 (2025) 111623



Contents lists available at ScienceDirect

International Journal of Surgery Case Reports

journal homepage: www.elsevier.com/locate/ijscr



Case report

A rare case of ancient schwannoma of nasal vestibule causing complete nasal obstruction: A case report and brief review of literature

Birhanu Kassie Reta [a,*], Andom Geremew Tesfay [b], Yordanos Birhane Gebrecherkos [c], Demelash Darota Dojamo [d], Yemane Leake Gebremichael [c], Dirar Medhanie Gebremedhin [e]

[a] Aksum University College of Health Science, Department of Pathology, Aksum, Ethiopia
[b] Aksum University College of Health Science, Department of Otolaryngology Head and Neck Surgery, Aksum, Ethiopia
[c] Aksum University College of Health Science, School of Medicine, Aksum, Ethiopia
[d] Addis Ababa University College of Health Science, Department of Pathology, Addis Ababa, Ethiopia
[e] Mekelle University College of Health Science, Department of Pathology, Mekelle, Ethiopia

ARTICLE INFO

Keywords:
Ancient schwannoma
Head and neck
Nasal vestibule
Schwannoma
Sinonasal

ABSTRACT

Introduction and importance: Schwannomas are benign tumors originating from nerve sheaths. Sinonasal schwannomas account for less than 4 % of head and neck schwannomas, making them a rare entity. Nasal schwannoma arising from the lateral wall is extremely rare, with only few reported cases. Ancient schwannoma is a rare variant of schwannoma that features a degenerative change. This case report is aimed at emphasizing that schwannomas should be entertained as a possibility in patients presenting with nasal vestibular masses.
Presentation of case: We reported a 21-year-old female patient who presented with a progressive left nasal mass with complete nasal obstruction. On examination there was a grey-white, non-tender, and smooth mass arising from the nasal ala vestibular aspect. Fine needle aspiration cytology was done, and it was reported as a benign spindle cell lesion. Complete excision of the mass was done, and subsequent histopathologic examination concluded ancient schwannoma. Immunohistochemistry for S100 demonstrated diffuse and strong positivity in the neoplastic cells, which further supported the diagnosis.
Clinical discussion: Sinonasal schwannomas account for 25–40 % of head and neck schwannomas. Generally, nasal schwannoma arises from the middle meatus and, in rare cases, the nasal septum. A definitive diagnosis is made via histopathology, and complete excision is the treatment of choice with low risk of recurrence.
Conclusion: Even though it is rare, schwannoma should be considered as a differential diagnosis in patients presenting with a benign looking nasal vestibular mass.

1. Introduction

Schwannomas are Schwann cell-derived tumors. Autonomic, cranial, and peripheral nerves are usually the source of them [1 –3]. They are benign tumor that grows slowly. Between 25 % and 40 % of all schwannoma instances include the head and neck. Sinonasal involvement is uncommon, occurring in fewer than 4 % of head and neck schwannomas [1,4–8]. They are most frequently found in the nasoethmoidal region, which is followed by the frontal, maxillary, and sphenoid sinuses [9].

Schwannomas usually occur in the fourth to sixth decades of life without sex preference [4]. Clinically, they show up as progressively expanding masses that cause headaches, hyposmia, epistaxis, and increasing obstruction of the nose. The location and size of the tumor determine its clinical presentation, which is usually solitary [1,5,10,11,13].

Due to the absence of distinctive clinicoradiological findings, a nasal schwannoma is typically diagnosed solely by histopathology [11,12]. The preferred course of treatment is complete resection [11,13]. Immunostaining for S100 helps differentiate schwannomas from other spindle cell tumors. After surgery, recurrence is uncommon [11].

The majority of nasal schwannomas originate from the nasal cavity's medial meatus and, in rare instances, the nasal septum [8,14]. In this case report we presented a schwannoma that developed from the vestibular aspect of the nasal ala. We reviewed the English literature and found that only few cases of vestibular schwannoma have been

* Corresponding author at: Aksum, Tigray 7080, Ethiopia.
E-mail addresses: birexkassie24@gmail.com (B.K. Reta), dirar.medhanie@mu.edu.et (D.M. Gebremedhin).

https://doi.org/10.1016/j.ijscr.2025.111623
Received 30 May 2025; Accepted 4 July 2025
Available online 5 July 2025
2210-2612/© 2025 The Authors. Published by Elsevier Ltd on behalf of IJS Publishing Group Limited. This is an open access article under the CC BY-NC-ND license (http://creativecommons.org/licenses/by-nc-nd/4.0/).

published. This case report is written in accordance with SCARE criteria 2025 [15].

2. Presentation of case

2.1. History and physical examination

A 21-year-old female patient presented with a complaint of a progressive left side nasal mass and obstruction of 2 years' duration. Otherwise, no history of trauma, facial pain, nasal discharge, bleeding or other complaints. Upon anterior rhinoscopy examination, there was a smooth, firm, non-tender, grey-white, well-circumscribed mass visible in the left nare with obliteration of the nasolabial fold on the left and bulging of the nasal ala, completely obstructing the nostril. Diagnostic nasal endoscopy revealed a mass in the left nasal cavity arising from the nasal vestibule, which was grey-white in color, well-circumscribed, and did not bleed on touch. The remaining nasal cavity appeared normal. Examination through the right nasal cavity and other otolaryngological examinations were unremarkable.

2.2. Diagnostic workup

Routine laboratory test values were within the normal range. Fine needle aspiration cytology was done from the nasal mass, and it revealed loose clusters and scattered single cells of bland oval to spindle cells having indistinct cytoplasm and elongated wavy nuclei with pointed ends in a myxoid background. With this, the cytopathology report concluded a benign spindle cell lesion with a recommendation of histopathology. CT scan was planned but it was not available at our center.

Grossly, the excised mass was grey-white and encapsulated, measuring 2.2 cm × 2.1 cm × 1.3 cm. The cut surface of the mass demonstrated a grey-white, glistening solid mass with areas of cystic change (Figs. 1 and 2). Microscopic examination of the hematoxylin and eosin-stained sections demonstrated an encapsulated tumor consisting of cellular Antoni A areas composed of bland oval to spindle cells having elongated wavy nuclei with tapered ends forming Verocay bodies, with alternating hypocellular Antoni B areas displaying extensive hyalinization with thick hyalinized variable-sized blood vessels, hemorrhage and hemosiderin-laden macrophages, and focal areas of myxoid changes (Fig. 3). With this, the histopathology concluded ancient schwannoma. Immunohistochemistry for S100 was done, and the neoplastic cells were seen to demonstrate diffuse cytoplasmic and nuclear positivity, which further supported the diagnosis of schwannoma (Fig. 4).

2.3. Treatment and follow-up

With written informed consent, under general anesthesia, the nasal vestibule was infiltrated with lidocaine, a transvestibular incision was done, and then through blunt and sharp dissection, the mass was completely excised. Hemostasis secured; layer-by-layer closure done. The postoperative course was smooth, and she was discharged on her second postoperative day. She is on follow-up and no complication or recurrence. She claimed that she is doing well and has no any complaint.

3. Discussion

Schwannomas usually originate from the autonomic, cranial, and peripheral nerves, with the exception of the optic and olfactory nerves [1]. However, the long-held notion that schwannomas do not form in these two nerves has been called into question by new case reports that describe schwannomas developing in those two nerves. This emphasizes the necessity of taking schwannomas into account when making a differential diagnosis for lesions in any part of the head and neck region that contains nerve cells, including the cranial nerves [2].

The most often diagnosed areas in the head and neck region are the oropharynx, parapharyngeal space, and neck soft tissue. Nasal cavity-specific schwannomas are quite uncommon. Only a few numbers of instances have documented a tumor genesis from the nasal sidewall; most studies indicate that the nasal cavity schwannoma originates from the nasal septum [8,14]. In our instance, the schwannoma arises from the nasal vestibule, making it extremely rare.

Schwannomas arise in the fifth or sixth decade of life in both sexes equally [14]. However, our case was a little younger age—21 years old. Because of its broad differential diagnosis and nebulous presenting symptoms, a sinonasal schwannoma is challenging to diagnose clinically. Anosmia, discharge, nasal obstruction, and epistaxis are the most common presenting clinical features of nasal schwannomas. Several conditions, including mucocele, inflammatory polyps, angiofibroma, glioma, papilloma, meningioma, sarcoma, squamous cell carcinoma, adenocarcinoma, and lymphomas, are included in the differential diagnosis of schwannoma [9].

CT scans and other medical imaging methods are helpful in determining the size, diameter, and extent of masses, but they may not yield meaningful results for differential diagnosis [8,12,16]. Histopathology

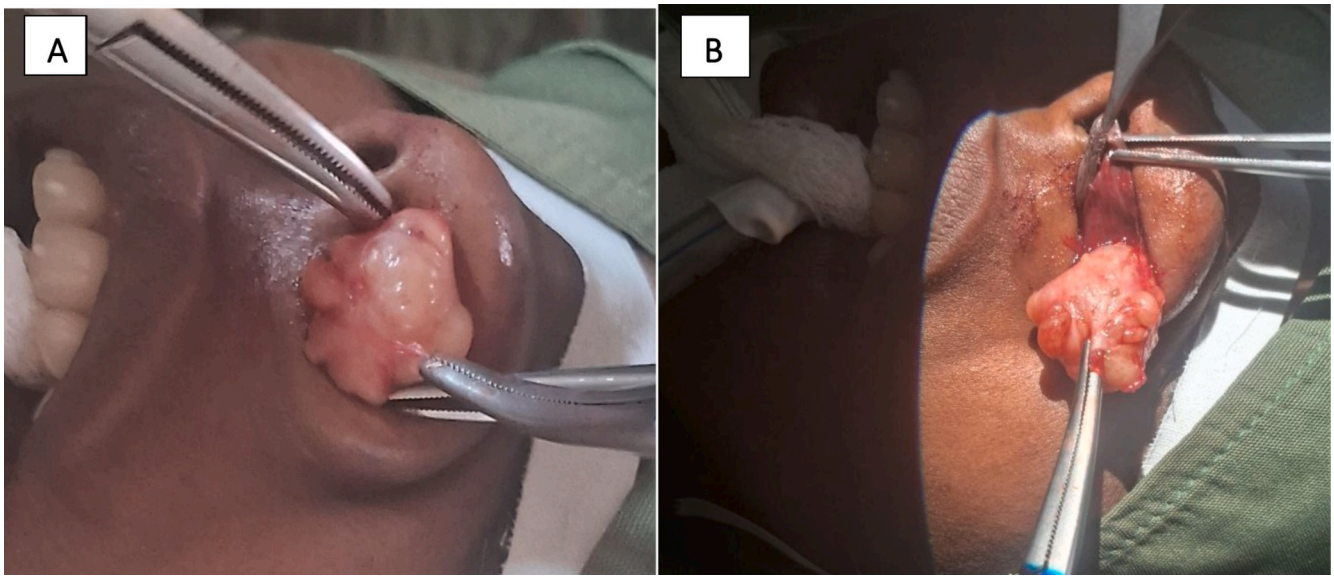


Fig. 1. Clinical image of the nasal mass during excision.

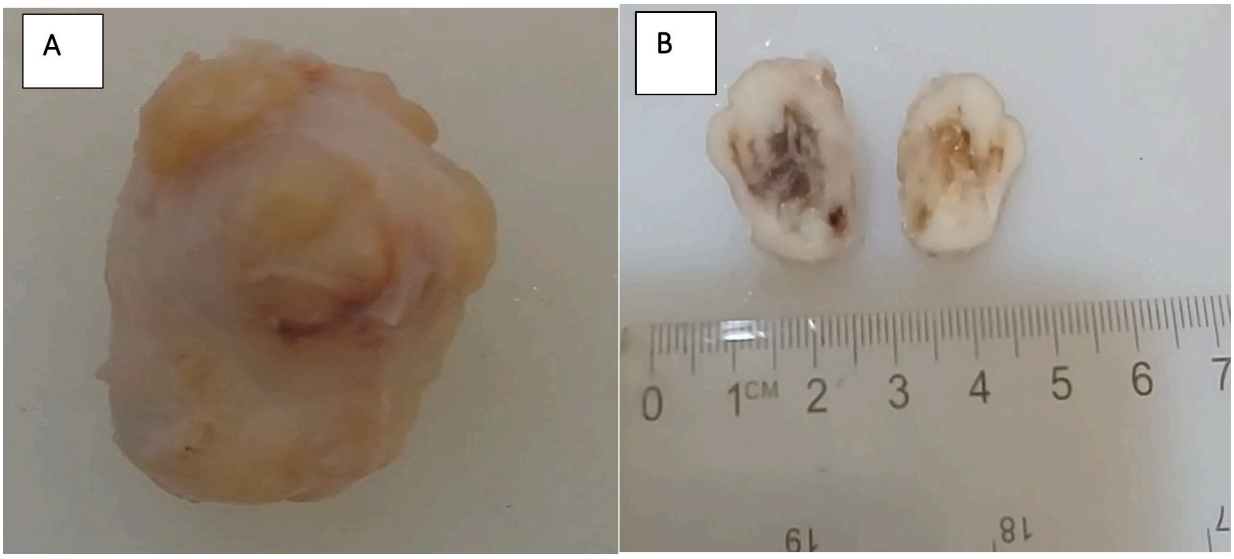


Fig. 2. A. Image of the gross appearance of the resected nasal mass. B. The cut surface of the specimen displaying grey white solid mass with areas of cystic change.

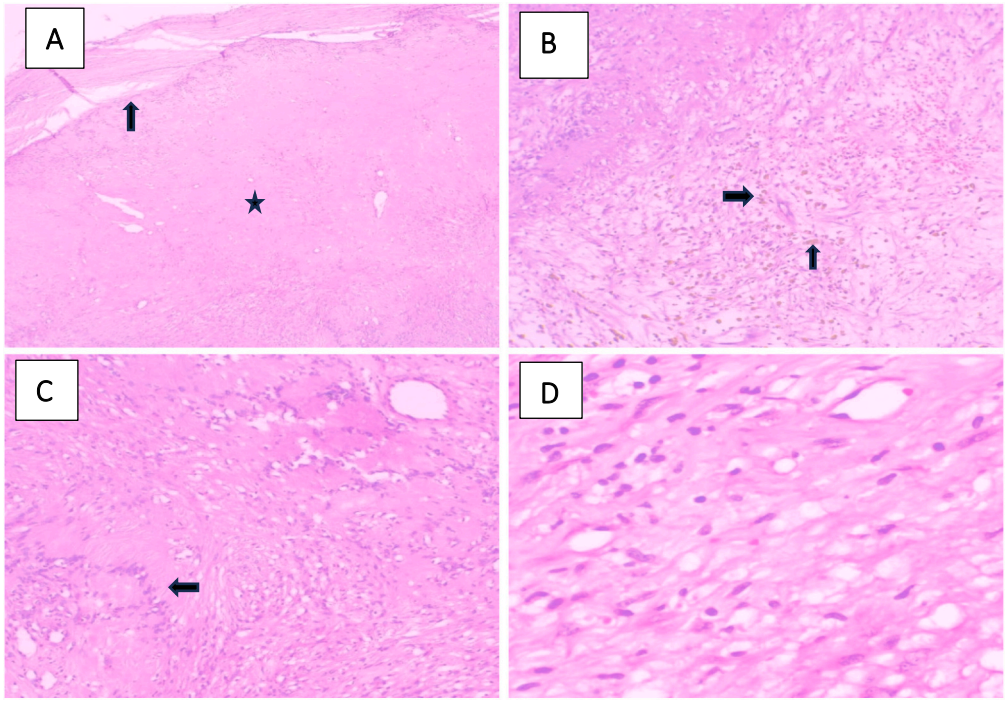


Fig. 3. Hematoxylin and eosin microscopic images. A. 4× magnification displaying the capsule (arrow) of the tumor and extensive area of hyalinization (star). B. 10× magnification displaying the hemosiderin laden macrophages (arrow). C. 10× magnification displaying verocay bodies (arrow) of Antoni A component of the tumor. D. 40× magnification displaying the bland oval to spindle cells having elongated wavy nuclei with pointed ends.

is the most precise technique for making a conclusive diagnosis of schwannoma [7,8,14,16]. Schwannomas often seem smooth and are encased in a capsule made of the nerve's perineurium [8,16]. In our instance, similarly, the mass was encapsulated with a smooth surface.

Upon histopathologic examination, schwannomas usually show encapsulated nodules with alternation of Antoni areas A and B and strong immunohistochemical staining with S100 [1,6,13,16–18]. These hypocellular alterations were attributed by Ackerman and Taylor to the tumor's ageing or degeneration. Therefore, schwannoma with reduced connective tissue cellularity was referred to as “ancient” [6,7]. Nonetheless, in terms of development rate and malignant transformation, ancient schwannomas behave similarly to other schwannomas [7]. Similarly, our case demonstrated encapsulation with characteristic Antoni A and Antoni B areas, with areas of degenerative changes consisting of extensive hyalinization, cystic changes, and hemosiderin-laden macrophages, which is diagnostic for ancient schwannoma. In our case the immunohistochemistry for S100 also supported the diagnosis, which showed strong and diffuse nuclear positivity.

The recommended course of therapy is total surgical removal of the tumor. Recurrence has seldom ever been documented [3,11,14,18]. The procedure may be performed externally or endoscopically [8,12,14,19]. In our instance, the tumor was removed externally since it was too large to remove endoscopically because the endoscope could not be navigated any farther. She is being followed up with, and thus far, there has been

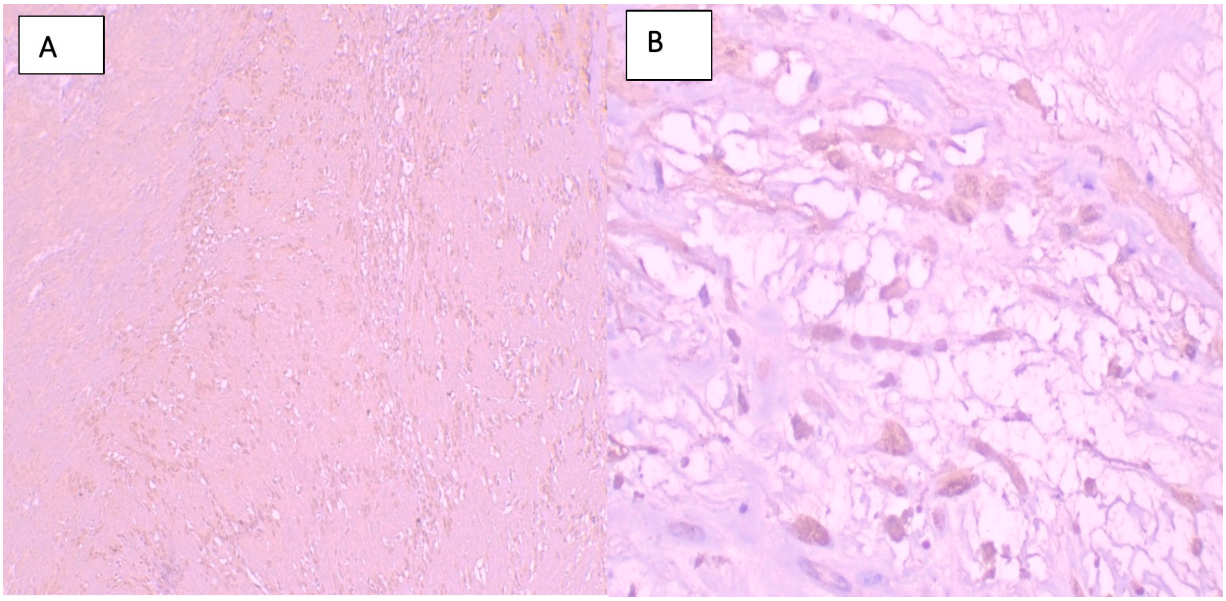


Fig. 4. Microscopic images of immunohistochemistry for S100. A (4×) and B (40×) magnification displaying neoplastic cells with diffuse cytoplasmic and nuclear positivity.

no recurrence.

4. Conclusion

Anytime a benign-looking lump is observed inside the nasal cavity, schwannomas should be taken into account in the differential diagnosis. Histopathology provides a definitive diagnosis, and total excision is the preferred course of therapy.

Author contribution

Birhanu Kassie Reta: Conceptualization; data curation; project administration; visualization; writing – original draft; writing – review and editing.

Andom Geremew Tesfay: review and editing; data curation; visualization; data curation.

Yordanos Birhane Gebrecherkos: Writing – original draft; writing review and editing; Conceptualization.

Demelash Darota Dojamo: Writing original draft; visualization.

Yemane Leake Gebremichael: Data curation; investigation; writing – original draft.

Dirar Medhanie Gebremedhin: Supervision; writing review and editing; visualization.

Consent

Written informed consent was obtained from the patient for publication of this case report. A copy of the written consent is available for review by the editor-in-chief of this journal on request.

Ethical approval

The study was notified to the university ethics committee; but this is case report and it does not need a specific ethical approval.

Guarantor

Birhanu Kassie Reta.

Research registration number

Not applicable.

Funding

This study did not receive any grants or funding from either for-profit or non-profit organizations.

Conflict of interest statement

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

References

[1] B. Yaprak Bayrak, A. Yaylacı, M. Ozturk, Clinicopathological findings of surgically treated nasal cavity schwannomas: a case series, Ear Nose Throat J. (2024).
[2] M. Birinci, G. Aydın Balaban, O. Okcu, O. Gül, T. Yemiş, M. Çeliker, et al., Extracranial head and neck Schwannomas, Turk. Arch. Otorhinolaryngol. [Internet] (Apr 15 2025). Available from: https://www.turkarchotolaryngol.net/articles/extracranial-head-and-neck-schwannomas/doi/tao.2025.2024-12-3.
[3] T. Kuppusamy, S. Ajith, DrB Kalyanasundaram, Schwannoma in the nasal cavity: a benign nerve sheath tumor at an odd location, Indian J. Case Rep. (May 2 2023) 106–108.
[4] D. Dosemane, S. Kabekkodu, B. Jaipuria, S. Sreedharan, V. Shenoy, Extracranial non-vestibular head and neck schwannomas: a case series with the review of literature, Braz. J. Otorhinolaryngol. 88 (Nov 1 2022) S9–17.
[5] M.A. Mosalleum Esraa, V. Phillips, Schwannoma of the nasal cavity: a case report and a review, Sudan Med. Monit. 10 (1) (2015) 27.
[6] Y.M. Eroglu, I.E. Emre, Ancient schwannoma of the nose: case report and literature review, J. Oral Maxillofac. Surg. Med. Pathol. 30 (6) (Nov 1 2018) 508–514.
[7] R. Venkatasamy, A.S. Mohan Singh, K. Arasu, S. Husain, C. Mianxin, Nasal septal ancient schwannoma: ancient and rare, Cureus (2023).
[8] B. Barati, M. Mohseni, M. Asadi, F. Mangeli, Schwannoma of the lateral nasal wall: a case report, Clin. Case Rep. 10 (2) (Feb 2022).
[9] E. Freeman, L. Hecht, J. Crum, M. Lutz, Anterior nasal Schwannoma: a rare sinonasal neoplasm, Cureus (Jul 3 2023).
[10] R. Fakhriani, C. Herdini, D. Yudistira, Sinonasal schwannoma and progressive nasal obstruction, Indonesian J. Cancer 18 (2) (Jun 27 2024) 211–215.
[11] J.Y. Liao, H.S. Lee, B.H. Kang, Nasal cavity schwannoma—a case report and review of the literature, Ear Nose Throat J. 103 (1) (Jan 1 2024) 19–24.
[12] M. Gupta, N. Rao, C. Kour, I. Kaur, Septal schwannoma of the nose: a rare case, Turk. Otolarengol. Arsivi/Turk. Arch. Otolaryngol. 55 (1) (Mar 20 2017) 41–43.
[13] A. Nicoara, M. Rakitovan, R.M. Closca, M. Militaru, A.C. Cindrea, F. Zara, Epidemiological, clinical, and histopathological features of the head and neck

region schwannomas—our experience in the western part of Romania with surgical insights, Diagnostics 14 (20) (Oct 1 2024).
[14] A. Agarwal, P. Kumar, N. Gupta, N. Sharma, A rare case of schwannoma of the nasal vestibule, Egypt. J. Otolaryngol. 39 (1) (Dec 1 2023).
[15] A. Kerwan, A. Al-Jabir, G. Mathew, C. Sohrabi, R. Rashid, T. Franchi, M. Nicola, M. Agha, R.A. Agha, Revised surgical CAse REport (SCARE) guideline: an update for the age of artificial intelligence, Premier J. Sci. 10 (2025) 100079.
[16] P.F. Galzignato, S. Chirumbolo, W. Cestaro, A. Scapinello, D. Bertossi, R. Nocini, Surgical and histological evidence of case reports showing schwannomas in the nasal area, Int. J. Surg. Case Rep. 94 (May 1 2022).
[17] M.S. Dhawle, S.G. Rathod, M.A. Bhatkule, R.S. Bindu, Sinonasal schwannoma – a case report, J. Clin. Diagn. Res. 11 (5) (May 1 2017) ED22–3.
[18] T.S.C. de Souza, N.T. Amadeu, L.C. Fontana, R. Hamerschmidt, P.E. Przysiezny, Nasal schwannoma: a challenging diagnosis of a rare neurofibromatosis type 2 manifestation, J. Head Neck Surg. 2 (1) (Nov 5 2020).
[19] C.W. Lee, V. Grammatopoulou, I. Bagwan, V. Sunkaraneni, Schwannoma of the Sinonasal Tract: Case Report With Review of the Literature Vol. 103, Annals of the Royal College of Surgeons of England. Royal College of Surgeons of England, 2021, pp. E216–E222.