

CASE REPORT**SCHWANNOMA MIMICKING BRANCHIAL CLEFT CYST- A CASE REPORT**Sanjeev Gupta¹, Vinod Kumar², Renu Verma³¹Assistant Professor, ²Senior Resident, ³Junior Resident

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ABSTRACT:

The present case reports the CT findings in a patient with a lateral neck mass histologically reported to be a schwannoma but having certain radiographic features commonly considered pathognomonic for a type III second branchial cleft cyst. Hence, the present case represents an exception to this long-established rule.

Key words: Cystic schwannoma, Branchial cyst

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INTRODUCTION:

Branchial cleft cysts (BCCs) are the most common cysts to arise in the neck and the most common congenital masses of the lateral neck.¹ Other common benign cystic lateral neck masses that can mimic BCCs include thyroglossal duct cysts, ectopic thymic cysts, lymphangiomas, dermoid and epidermoid cysts, and cystic nerve sheath tumors.² Both BCCs and their benign cystic mimics are typically soft, slow growing, and painless, making clinical distinction difficult.³ Cross-sectional imaging has become the mainstay of diagnosis for these lesions.² One-third of schwannomas occur in head and neck region, the most common site being the parapharyngeal space.⁴ Cystic change is uncommon in these tumors being reported in 4% of schwannomas.⁵ This is a case report of a cystic schwannoma demonstrating the classic location and CT signs of a type second BCC in a 29-year-old male patient with right sided neck mass mimicking as branchial cleft cyst clinically and radiologically.

CASE REPORT

A 29 year old male presented to our outpatient department with chief complaint of a solitary swelling in the right side of the neck of 5 years duration. The swelling was insidious in onset and gradually increased in size over past 1 year following trauma by a cricket

ball, to the present size of approx 4 x 3 cm approx. Family and past history of tuberculosis was also negative. The swelling was soft, painless, mobile, not moving with deglutination. The skin over the swelling was freely mobile and not associated with discoloration. The swelling caused no change in voice, no neurological deficit and no other co-morbidities.

On local examination, an ovoid solitary swelling with well defined anterior margin was found in the right anterior triangle of the neck anterior to the anterior border of sternocleidomastoid. The swelling was soft, non-tender, compressible, nonpulsatile and transillumination test was positive. A clinical diagnosis of branchial cyst was made and the patient was sent for FNAC. The aspirate yielded only blood and was inconclusive. On Ultrasound examination, the swelling was confirmed to be cystic in nature with thick internal echoes which was present in the right posterior region of the neck deep to sternocleidomastoid, measuring 37 x 28 mm in size. On axial and spiral contrast enhanced CT examination, a well-defined, heterogenous thin walled, predominantly cystic round to oval lesion measuring approx. 37 x 28 mm in size in the posterior cervical region on the right side showing mild rim enhancement. The lesion was found to be located deep to the right sternocleidomastoid muscle and posterior to the right IJV and right CCA pushing them anteromedially. Few lymph nodes, largest measuring 8mm in AP dimension

was seen at level of II B just superior to the aforementioned cystic lesion.

The mass was finally excised (figure 1 and 2). Intra-operatively it was found to be well encapsulated and was adherent to the adjacent soft tissue and vital structures (blood vessels) from which the cyst was separated and excised. The excised mass was sent for histopathological examination.

Histological findings were consistent with a cystic schwannoma. On morphological examination, the lesion revealed typical features of schwannoma with both hypercellular and hypocellular areas. The Antoni A areas were cellular composed of spindle cells arranged in a palisading fashion. In Antoni B areas tumor cells were separated by abundant edematous fluid forming cystic spaces and giving a myxoid appearance. Verocay bodies and S-100 protein were present. No mitoses or areas of necrosis were identified. On immunohistochemistry, the tumor cells were strongly positive for S100 and focally for NSE.



Figure 1: Cystic mass removed from right posterior region of the neck deep to sternocleidomastoid



Figure 2: Excised tissue sent for histopathological examination

DISCUSSION

Schwannomas are neurogenic tumors, which arises from the cells forming the neural sheath.⁶ They may arise from any cranial, peripheral or autonomic nerve.⁷ Schwannoma can arise from all cranial nerves in the head and neck region, the most common being the eighth cranial nerve.⁸ However in approximately 10-40% of cases, origin of nerve remains unidentified.⁹ The most common location of schwannomas of the head and neck region is the parapharyngeal space. Other locations include submandibular space, paranasal sinuses, cheek and oral cavity which are quite rare.⁸ When arising from the parapharyngeal space, they present as asymptomatic, slow growing neck masses

along the medial border of sternocleidomastoid.⁵ Pre-operative diagnosis may be difficult because most do not have neurological deficits at presentation and varied much commoner differential diagnoses may have to be considered. These include branchial cleft cyst, paraganglioma, malignant lymphoma and metastatic cervical lymphadenopathy.¹⁰ Hoarseness is the most common symptom, if present. A paroxysmal cough may be elicited on palpating the mass, a clinical sign seen in vagal schwannoma.⁴ The diagnostic difficulty may be further compounded by presence of marked cystic change which is noted in 4% of schwannomas. Cystic schwannomas expand more rapidly than non cystic schwannomas and are often comparatively large due to cystic expansion. The cystic change has been attributed to necrosis, mucinous degeneration, hemorrhage and micro-cysts formation. Antoni B areas displaying loosely arranged spindle cells within a myxoid matrix are particularly prone to degeneration and cyst formation. In such cases, FNAC often yield hypocellular fluid, instead of material from the adjoining cellular areas.⁵ Ultrasound-guided FNAC can contribute substantially as it may aid in aspiration from the hypercellular area.

Radiological investigation especially MRI has great role in the pre-operative work-up as it helps in diagnosis and also aids in evaluating the extent of the tumor and its relationship with the jugular vein and the carotid artery.⁸ The final diagnosis however rests on histopathological examination of the tissue displaying the characteristic Antoni A and Antoni B areas, palisading of bland appearing spindle tumor cells and formation of verocay bodies. Immunohistochemically schwannomas display strong positivity for S100.⁷

The first documented case of a cystic schwannoma of the neck masquerading as branchial cleft cyst clinically and ultrasonographically was reported by Buchanan MA et al.¹¹ In this patient, besides the secondary degenerative changes of hemorrhage and cystic degeneration, lymphoid aggregates were noted at few foci in the cystic areas of the tumor. Lymphoid follicles and scattered lymphocytes have been reported in gastrointestinal schwannomas.¹² Considering the location of the tumor and its cystic nature, branchial cleft cysts form one of the most important differential diagnoses. Thus, it is of paramount importance to differentiate between these two entities both preoperatively and postoperatively as incomplete excision may lead to recurrence especially of branchial cyst. Therefore a case of excised branchial cyst needs long term monitoring. Surgical excision is recommended in case of schwannoma and conservative management has also a place in treatment. However, schwannoma rarely recurs if completely excised.¹³

CONCLUSION

We conclude that although BCCs are most common cystic swelling of the neck but when dealing with typical cystic neck masses, the possibility of schwannomas should be considered. A thorough sampling of the tumor would most likely yield typical S100 positive hypocellular and hypercellular areas.

REFERENCES

1. Lev S, Lev MH. Imaging of cystic lesions. Radiol Clin North Am 2000;38:1013-27.
2. Coppens F, Peene P, Lemahieu SF. Diagnosis and differential diagnosis of branchial cleft cysts by CT scan. J Belge Radiol 1990;73:189-96.
3. Harnsberger H, Manusco A, Muraki A, et al. Branchial cleft anomalies and their mimics: computed tomographic evaluation. Radiology 1984;152:739-748.
4. Chang SC, Schi YM. Neurilemmoma of the vagus nerve: a case report and brief literature review. Laryngoscope 1984;94:946-9.
5. Wakoh M, Yonezu H, Otonari T, et al. Two cases of schwannoma with marked cystic changes. Dentomaxillofac Radiol 2005;34:44-50
6. Lahoti BK, Kaushal M, Garge S, Aggarwal G. Extra vestibular schwannoma: a two year experience. Indian J Otolaryngol Head Neck Surg 2011;63:305-9.
7. Lanham PD, Wushensky C. Second brachial cleft cyst mimic: A case report. Am J Neuroradiol 2005;26:1862-4.
8. Sharma DK, Sohal BS, Parmar TL, Arora H. Schwannomas of head and neck and review of literature. Indian J Otolaryngol Head Neck Surg 2012;64:177-80.
9. Al-Ghamdi S, Black MJ, Lafond G. Extracranial head and neck schwannomas. J Otolaryngol 1992;21:186-8.
10. Colreavy MP, Lacy PD, Hughes J, et al. Head and neck schwannomas: a 10-year review. J Laryngol Otol 2000;114:119-24.
11. Buchanan MA, Williams SM, Hellquist H, Innes AJ. Cystic schwannoma of the cervical plexus masquerading as a type II second branchial cleft cyst. Eur Arch Otorhinolaryngol 2009;266:459-62
12. Park KJ, Kim KH, Roh YH, et al. Isolated primary schwannoma arising on the colon: report of two cases and review of the literature. Korean Surg Soc 2011;80:367-72.
13. Kang GC, Soo KC, Lim DT. Extracranial non-vestibular head and neck schwannomas: a ten-year experience. Ann Acad Med Singapore 2007;36(4):233-8.



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