

A Case of Radial Nerve Schwannoma

AFFEE ASMA, ANANDI ANDAPPAN, CHOUDAPPAN MADHAVAN

ABSTRACT

Schwannoma are the most common peripheral nerve sheath tumors in adults. They are the benign tumours arising from the Schwann cells. However, radial nerve is uncommonly involved. We are presenting this case for its rarity. We report a 35 years old female who presented with a painless lump in

the right forearm. Radiological investigations showed it was a schwannoma arising from the radial nerve. We excised the tumour, and there was no postoperative nerve paresis. The histopathology confirmed that it was a schwannoma. Surgical excision is the treatment and various factors contribute to the avoidance of postoperative nerve palsies.

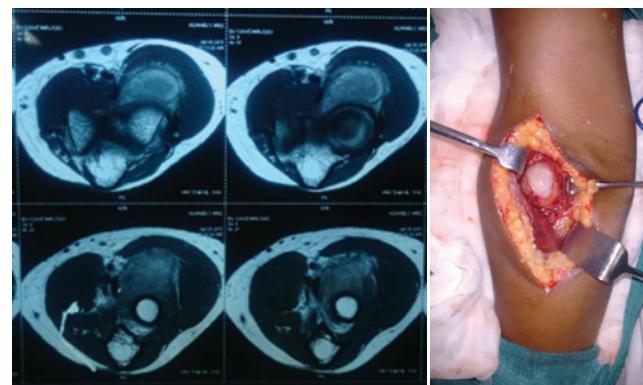
Keywords: Benign, Nerve sparing, Peripheral nerve sheath tumor

CASE REPORT

A 35 years old female, presented to our OPD with complaints of a swelling in the right forearm for the past 3 years. The swelling was initially painless. However, for the past 6 months she complained of mild pain over the swelling. There were no similar swellings anywhere else in the body. She gave no history of trauma, fever, loss of appetite, loss of weight. Her past history was not significant. She had no other comorbid illnesses. Her general examination was not significant. The swelling appeared as a vague mass 4x5 cm in the anterolateral aspect of the right forearm near the elbow. The borders were indistinct. The surface was smooth, the skin over the swelling was normal. On palpation the swelling was firm, not mobile, and not pulsatile. There was no limitation of elbow flexion. Tinel's sign was negative. There was no distal neurovascular deficit. Axillary lymph nodes were not palpable. The differential diagnoses considered were intramuscular/parosteal lipoma, peripheral nerve sheath tumor. An image guided tru-cut biopsy was taken with the result being a schwannoma. MRI scan showed a fusiform lesion measuring 4x3.6x2.7 cm is seen on the lateral aspect of the elbow joint. The lesion appears mildly heterogeneous on T1 and hyperintense on T2. The MRI picture of the lesion is shown [Table/Fig-1]. The radial nerve is displaced by the tumor.

We obtained consent for surgery with regard to possible radial nerve palsy and permission to use her case records and photographs for journal purposes. We proceeded with

excision of the tumour, using Henry's approach to the radius. The forearm was supinated, longitudinal incision was made at a point just lateral and proximal to biceps tendon (at the flexor crease of the elbow) extended distally in forearm along medial



[Table/Fig-1]: MRI picture. The lesion can be made out in the MRI (white arrow). [Table/Fig-2]: Intraoperative picture. The tumour is visible (white arrow)

border of brachioradialis towards the radial styloid. Deep fascia of forearm was divided in line with the skin incision, taking care to protect the radial vessels. Fascia was incised between brachioradialis and FCR. The tumour was identified as arising from the superficial branch of the radial nerve. [Table/Fig-2] shows the intraoperative picture of the tumour. The tumour was excised in toto. The specimen was sent for histopathological examination. The tumour was reported as a

Schwannoma. The patient was kept in the postoperative ward for seven days and discharged as the wound was healthy.

The patient was followed up monthly for a period of 2 months. The wound status was noted, muscle power was graded and the sensations tested. She had no paresis or complications in the post-op period.

DISCUSSION

Schwannomas are benign, extrafascicular lesions arising from the schwann cells of peripheral nerves [1]. They are rare tumors making up less than 8% of soft tissue neoplasms [2]. They usually occur in 30-60 year olds with no predilection for either sex [3]. They are well circumscribed oval lesions with an extrafascicular growth. Histology shows highly cellular (Antoni, Type A); Loose myxoid (Antoni, Type B). Degenerative changes like cysts; calcification; hemorrhage; hyalinization can be seen especially in large, deep tumors. The tumor is positive for Epithelial membrane antigen (EMA), Leu-7 and S-100 markers. They are differentiated from neurofibromas which have an intrafascicular growth pattern and negative for EMA. They are usually painless asymptomatic swellings. However, pain or paraesthesia may occur along the course of the involved nerve. Sensory loss and muscle weakness are rare.

MRI of the swelling usually reveals a heterogeneous T1 lesion and a hyperintense T2 lesion.

Some atypical types of schwannoma are: ancient, psammomatous melanotic, cellular, benign epithelioid, neuroblastoma-like, plexiform. A brief review of literature suggests that radial nerve schwannoma is quite rare. A study by Adani et al., [4] had no cases of radial nerve involvement in a series of 24. According to the study by Knight et al., [5] 14 out of 234 cases of schwannoma had radial nerve involvement. Similarly, only 3 out of 34 cases in Jerzy Gosk's series had involvement of the radial nerve [6].

AUTHOR(S):

1. Dr. Affee Asma
2. Dr. Anandi Andappan
3. Dr. Madhavan Choundappan

PARTICULARS OF CONTRIBUTORS:

1. Professor, Department of General Surgery, Institute of General Surgery, Madras Medical College, Chennai, India.
2. Assistant Professor, Department of Surgery, Institute of General Surgery, Madras Medical College, Chennai, India.

Different surgical techniques, involving removing the tumor either with or without its capsule, have been described. Although recurrence rates after surgical removal are low, incomplete tumour resection or misdiagnosis of multiple tumors may cause recurrences.

Neural deficits in the post of period are rare. The postoperative results depend on site (distal better than proximal), size < 5 cm and previous attempts done for removal/biopsy of tumour [7].

CONCLUSION

Schwannomas are benign peripheral nerve sheath tumors that are rarely symptomatic. They have to be differentiated from other tumors like neurofibroma as the clinical course varies. They should be excised carefully without damaging the nerve fibres.

REFERENCES

- [1] Rodriguez FJ, Folpe AL, Giannini C, Perry A. Pathology of peripheral nerve sheath tumors: diagnostic overview and update on selected. *Diagnostic Problems Acta Neuropathol.* 2012; 123(3): 295-319.
- [2] Senol N, Yilmaz O. A rare type of peripheral nerve sheath tumor: radial nerve schwannoma. *Turk Neurosurg.* 2015;25(1):137-40.
- [3] Ozdemir O, Ozsoy MH, Kurt C, Coskunol E, Calli I. Schwannomas of the hand and wrist:long-term results and review of the literature. *Journal of Orthopaedic Surgery.* 2005;13(3):267-72.
- [4] Adani R, Baccarani A, Guidi E, Tarallo L. Schwannomas of the upper extremity: diagnosis and treatment. *Chir Organi Mov.* 2008; 92(2):85-88.
- [5] Knight DM, Birch R, Pringle J. Benign solitary schwannomas - A review of 234 cases. *J Bone Joint Surg Br.* 2007;89(3):382-87.
- [6] Gosk J, Gutkowska O, Urban M, Whukiewicz W, Reichert P, Ziolkowski P. "Results of surgical treatment of schwannomas arising from extremities. *BioMed Research International.* vol. 2015, Article ID 547926, 8 pages, 2015. <http://dx.doi.org/10.1155/2015/547926>.
- [7] Matejcik V. Our experience with surgical treatment of the schwannomas of peripheral nerves. *Bratisl Lek Listy.* 2002;103(12):477-79.

3. Postgraduate Student, Institute of General Surgery, Madras Medical College, Chennai, India.

NAME, ADDRESS, E-MAIL ID OF THE CORRESPONDING AUTHOR:

Dr. Madhavan Choundappan,
Chettinaad Housing, 1st Floor, No. 1, 9th Avenue, Ashok Nagar, Chennai, Tamil Nadu-600083, India.
E-mail: mchoundappan@gmail.com

FINANCIAL OR OTHER COMPETING INTERESTS:

None.

Date of Publishing: Oct 01, 2015