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An interesting case of Schwannoma left hand: Case report

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Abstract

Schwannoma is a tumor of tissue covers nerves called the nerve sheath. It is a common type of benign peripheral nerve tumor in adults can occur anywhere in the body at any age. It typically arises from single bundle (fascicle) within the main nerve and displaces the rest of nerve.

Here we present a case of swelling in the left hand for the past 6 years. Increasing in size in the last 3 months. Came with the complaints of numbness over the little finger and half of the ring finger for the past 3 months. No restricted movements in the finger. Imaging done showed soft tissue sarcoma without any nerve involvement. Patient underwent local excision. HPE revealed as Schwannoma.

Keywords: Schwannoma, electrodiagnostic, MR neurography, schwann cell, Antoni A and B, S-100

Introduction

Schwannoma is a benign, encapsulated neoplasm derived from schwann cells which are ectodermal in origin ^[1]. It is the most common peripheral nerve sheath tumor. Schwannomas or neurilemmomas accounts for 5% of all tumors in the upper extremities ^[1]. They are generally solitary, slow-growing lesions; rarely multiple lesions can be seen.

Neurilemmoma is a definite benign lesion and does not show any tendency to malignant transformation. Common types are conventional, cellular, plexiform, ancient forms and melanotic schwannoma. The diagnosis relies on clinical history, physical examination and imaging studies. MRI and ultrasound are both useful for diagnosis. But MRI is the diagnostic tool of choice.

Surgical excision is treatment is usually advised ^[1, 8]. Studies indicate that a neurilemmoma can be removed by delicate.

Case report

A 62 year old female patient presented to surgery outpatient department with complaints of swelling in the right hand since 6 years, insidious in onset gradual in progression. She had history of pain and restriction on movement for 6 months. It was associated with numbness of little finger and half of the ring finger, sudden increase in size in the last 3 months. Examination showed swelling of 5x2cm, firm, mobile mass was present in palmar aspect of right hand with Tinel's sign positive. Ultrasound Imaging showed soft tissue swelling over palmar aspect of right hand with high vascularity. Trucut biopsy revealed features of Benignspindle cell neoplasm.

MRI showed ill-defined, lobulated, hetero-intense soft tissue lesions in medial palmar aspect of left hand. The lesion is spanning antero-posterioly over subcutaneous plane over 4th and 5th metacarpals, proximally reaching over base of 5th metacarpal. Distally, the lesion is just extending beyond 5th metacarpophalangeal joint.

Patient was taken up for surgery with a clinical diagnosis of a benign soft tissue swelling. Excision under general anesthesia. Intra operative findings –At surgery the Spindle shaped encapsulated soft tissue swelling excised in toto. Hemostasis attained. Wound closed with drain in situ. Patient post-operative period was uneventful and there was no palsy. HPE showed circumscribed benign neoplasm composed of spindle shaped cells, there is no evidence of atypia or mitotic figures noted.

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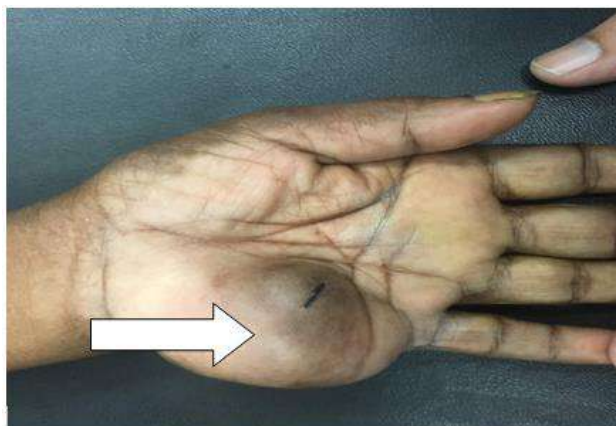


Fig 1: Image shows swelling in the left hand lateral aspect (arrow)



Fig 2a



Fig 2b

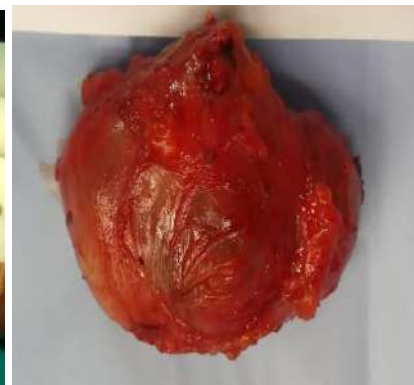


Fig 2c

Fig 2a, 2b 2c: Showing Excision of the tumor completely, Complete Enucleation of tumor and Specimen in toto

Discussion

A Schwannoma, also known as neurilemmoma, neuroma, neurolemoma or Schwann cell tumor, is an encapsulated neoplastic lesion that arises from neurilemmal cells which normally produce insulating myelin sheath covering peripheral nerves [6].

Schwannomas often occur in fourth and fifth decade and has a 1.6:1 female predilection. They are found in varied locations as the brachial plexus and the sciatic nerve [3, 4, 9-11].

Schwannoma are slow-growing and they don't traverse the nerve but remain in sheath lying on top of it. This explains why they are clinically silent and present as an incidental finding. Patients may sometimes note the cosmetic deformity or a palpable mass. An increase in size increases the compartment pressure.

The evaluation of a patient with a suspected pathologic nerve condition broadly includes history, physical examination, and imaging. Plain films may not reveal any changes whereas computed tomography (CT), magnetic resonance (MR), especially MR neurography, may display a peripheral nerve tumor in a more detailed manner. Additional diagnostic tests, including electromyography (EMG) and nerve conduction study (NCS), evaluate neuromuscular function to assess denervation, preservation of motor units, or conduction loss.

Special studies to consider include computed tomography (CT) and magnetic resonance imaging (MRI). MRI is particularly useful; it shows a usually round or oval mass with a moderately bright signal on T1-weighted images and a bright, heterogeneous signal on T2-weighted images [1]. The mass is usually less than 2.5 cm in size. The lesion enhances uniformly with gadolinium contrast.

Neurilemmomas have a well-defined, fibrous capsule. Histologically, there are two distinct regions, as follows:

Antoni A areas - These are cellular regions with predominantly benign spindle cells in many intersecting bundles; they may palisade around eosinophilic regions that are called Verocay bodies, and they are positive for S100 staining

Antoni B areas - These are much less cellular and have a background of loose connective tissue that is myxomatous in appearance [2, 7]

Occasionally, a more aggressive histologic appearance may predominate, but such forms usually lack mitotic figures.

Neurilemmomas are commonly classified according to the Enneking system for benign lesions, as follows:

Grade 1: Inactive lesions

Grade 2: Lesions that deform the surrounding tissues but are not destructive or locally aggressive

Grade 3: Lesions that are locally aggressive and may invade local tissues but do not have metastatic potential Generally, neurilemmomas are grade 2 or 3.

Effective use of stereotactic radiosurgery (SRS) for these types of lesions has been reported by both selectively targeting only the abnormal lesion, and using cross-firing techniques to minimize the exposure of the adjacent normal tissue.

Complete surgical resection of the tumor, whilst safeguarding the surrounding structures, resulted in cure, since no damage was sustained by the underlying nerve. Most common complication of surgical treatment of neurilemmoma is initial neurapraxia; however, this neurologic deficit can be permanent,

depending on the resection of neural tissue. Generally, patients tolerate resection well, with complete and rapid relief of symptoms.

If tumor is near vascular structures, stereotactic body radiation therapy may be used to limit damage to healthy tissue and radiation targeted precisely to a tumor.

Schwannomas occasionally turns malignant. Malignant peripheral nerve sheath tumors (MPNST) are a group of neurogenic tumors may be sporadic or coexist with neurofibromatosis. Originates from peripheral nerves or from cells associated with the nerve sheath, such as Schwann cells or fibroblasts. They are rare neoplasm and affect 0.001 percent of the population. Epithelioid subtype is rare and represents a well-recognized entity comprising of about 5^[5] percent of these tumors.

Conflict of Interest

All authors declare that they have no conflict of interest.

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