Paraspinal Intramuscular “Ancient” Schwannoma: Case presentation about a rare pathology

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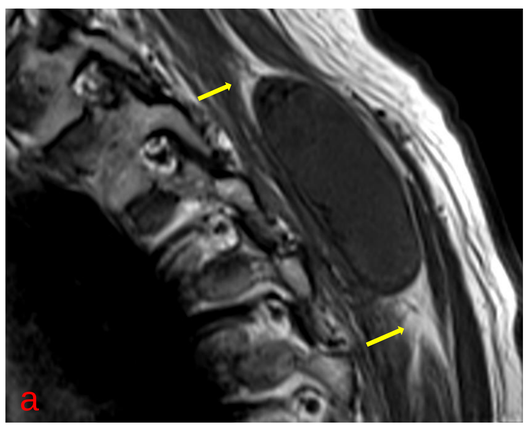
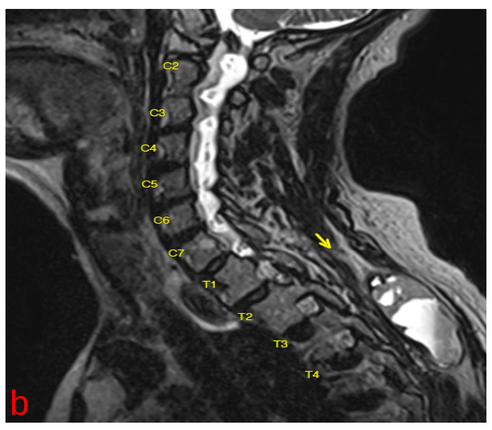
INTRODUCTION

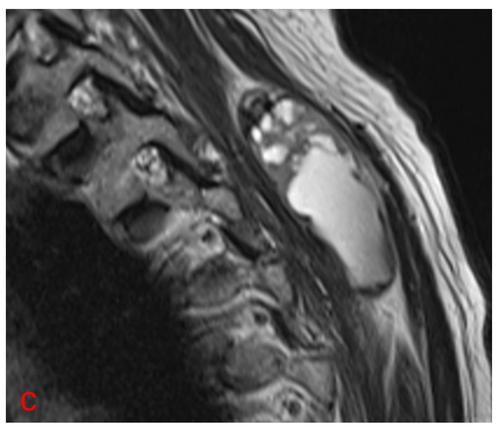
A pure intramuscular paraspinal schwannoma is extremely rare, with only few case reports in the literature. Due to low frequency and lack of specific clinical signs and symptoms, pre-surgical diagnosis is difficult. The identification of the originating nerve is not always possible, which makes the radiological assessment difficult and leads to a broad differential diagnosis. Pathological analysis is always necessary to make the definitive diagnosis. We report here a case of a 69-Year old female with a thoracic intramuscular paraspinal schwannoma. Intraoperative nerve isolation was performed and complete surgical excision was achieved, with good recovery.

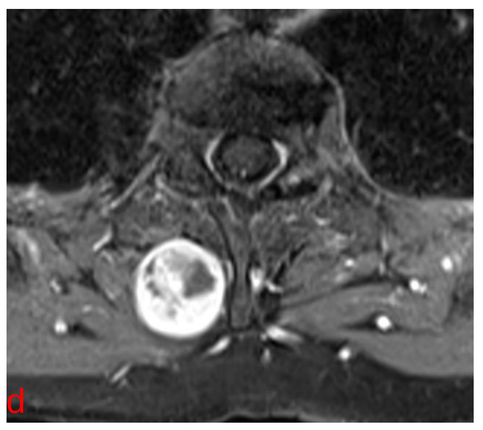
CASE PRESENTATION

A 69-year old, female patient presenting with a several months history of an unspecific right, dorsal, paravertebral numbness associated with a right-sided, homogeneous, subcutaneous mass without skin reaction or neurological signs. A contrast enhanced MRI showed at D3-D5 levels a right-sided intramuscular paravertebral, partially cystic mass with homogeneous contrast enhancement in the non-cystic component. No surrounding edema was found. At the upper pole of the lesion, it was possible to identify a paraspinal nerve coming down from D1, from which the mass was expanding. The first diagnostic hypothesis was a paraspinal schwannoma arising from a right dorsal ramus of D1.





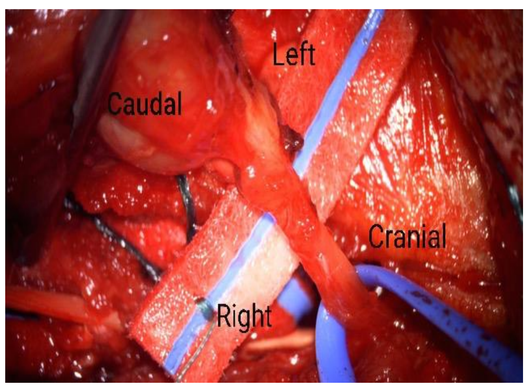


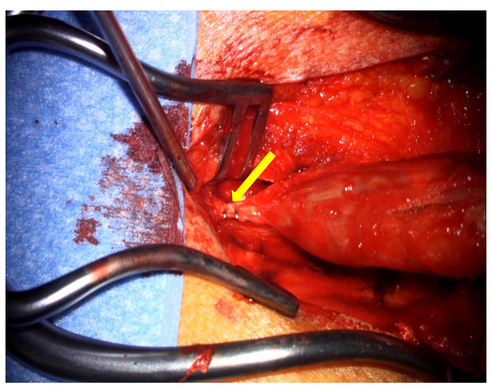


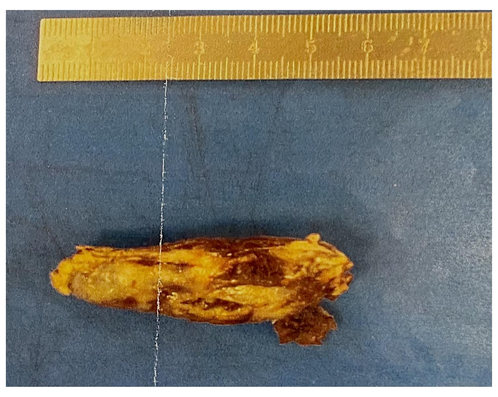
RADIOLOGICAL ANALYSIS

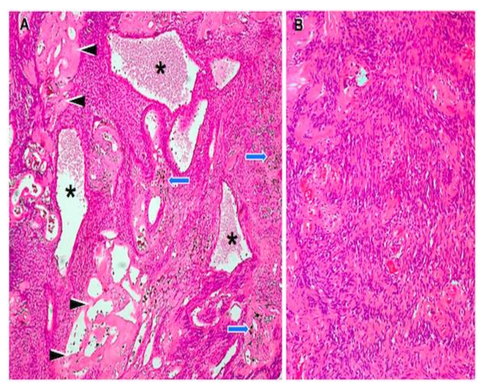
We show here the pre-operative MRI: a) sagittal cut, TSE T1-weighted; b) sagittal cut, 3D T2-weighted; c) sagittal cut, TSE T2-weighted; d) axial cut, TSE T1-weigthed.

As underlined in the literature, we identify muscle changes due to the progressive denervation, according to the radiological behavior of all the intramuscular "not-paraspinal" schwannomas (“split fat” sign, appreciated on T1-weighted images, fig “a”). The evidence of a paraspinal schwannoma can be enforced by the identification of the originating nerve ("entry-and-exit nerve” sign, fig “b”),









SURGICAL AND PATHOLOGICAL CONSIDERATIONS

At the intra-operative microscopic image (Zeiss Kinevo 900), we identify the lesion (caudal) and the originating nerve (cranial). The surgical approach was performed in the aim to extend the anatomical dissection more cranially than the lesion should require, so that an exposition of the originating nerve was feasible. Two haemostatic clips, at the cranial and caudal segment of the originating nerve, were placed before the neurotomy. The macroscopic specimen’s analysis showed evidence of an ovoid tissue nodule with an irregular combination of yellow mixoid with kysto-hemorrhagic tissues, finding that is frequently found in the rare variant of “ancient” schwannoma. Microscopy showed a focal emergence of nuclear palissades (Verocay bodies), a tipical characteristic of schwannomas.

DISCUSSION

We performed PRISMA-P 2015 based search using the keywords *“dorsal schwannoma”, “paraspinal schwannoma”, “intramuscular schwannoma”* on the databases PubMed and Google Scholar. Only six other case reports focusing on this pathology were found, and only one of these reports mentioned the “ancient” variant of schwannoma. No specific radiological pattern to clearly suggest this diagnosis exists, but the “split-fat” and the “entry-and-exit nerve” signs seemed to be consistent findings in the previous literature as well as in our case. All patients underwent a complete surgical resection with a favourable clinical course.

CONCLUSION

A schwannoma should always be included in the differential diagnosis of a subcutaneous, paraspinal mass lesion. Contrast enhanced-MRI is the diagnostic imaging modality of choice with the “split-fat“ and the “entry-and-exit nerve “ signs being a frequent characteristic for this type of lesions. Once the diagnosis is suspected, the goal of treatment should be a complete resection rather that a “stand alone” biopsy or lesion debulking.