

Axillary Nerve Schwannoma at the Quadrilateral Space: Report of a Case

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Abstract

The authors present a very rare localization of an axillary nerve schwannoma, which arose in the quadrilateral space.

The patient complained of vague disturbances in the shoulder and the MRI beautifully demonstrates the pathology including the detailed anatomy of the quadrilateral space.

He was operated and the tumour completely removed without consequences.

The case deserves mention for its extreme rarity (1 out of more than 700 cases of operated schwannomas) and for the beautiful images we obtained.

Keywords: Axillary Nerve Tumour; Schwannoma; Velpeau Carré; Quadrilateral Space

Introduction

Schwannomas (neuromas) represent the 8% of all soft tissue tumors and are the commonest among peripheral nerve tumors. They can arise everywhere; a localization in the upper extremity is found in 12 - 19% of schwannomas. However only very few cases of neuromas originating from the axillary nerve are reported in the literature and even more rarely they are located distally in the quadrilateral space of Velpeau. This case is well documented and adds to the scanty literature of the issue.

Case Report

This 51 year-old male patient complained of pain in the right shoulder, related to physical activities and physical working; an electric shock was caused by abduction and extra rotation of the scapulo-humeral joint. At the physical examination, there was neither a palpable mass nor neurological deficits.

At MRI (Figure 1) a spherical mass of 2 cm in diameter in the area of the quadrilateral space is visible. The boundaries of the tumour within the quadrilateral space (superiorly the teres minor

muscle, inferiorly the teres major, medially the long head of the triceps, and laterally the humeral shaft) are well delineated.

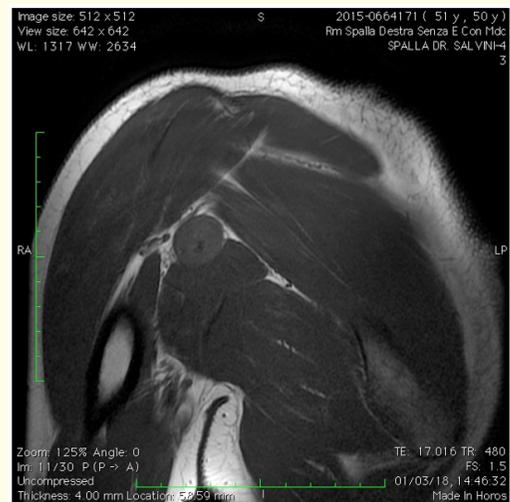


Figure 1

The lesion is well-defined and solid, homogeneously enhancing, T1 hypo and T2/proton density fat saturation hyperintense. It is in continuity with the axillary nerve. In the event of a surgically accessible schwannoma a biopsy is unnecessary and bears only some risks of nerve damage. Surgery is more straightforward and is conclusive.

The approach was via a posterior access to the quadrilateral space of Velpeau, entering in the soft tissue gap between the lateral border of the deltoid and the long head of the triceps, preserving the fascial coverage of the two muscles (Figure 2). The axillary nerve was enlarged by the schwannoma and after the isolation of the main trunk of the nerve and the fascicles of its trifurcation we performed an “en block” intracapsular removal of the lesion through an area without nervous fibers and mute to electric stimulation. The patient was immediately well and without any neurological impairment.

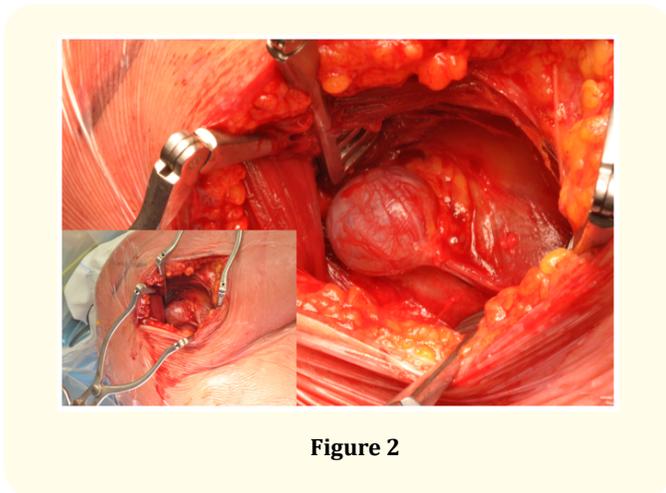


Figure 2

Discussion

The report is principally addressed to the presentation of a well-documented unusually located benign schwannoma. This localization in the distal axillary nerve is very unusual and only occasional cases have been reported [1,2,4-6]; a recent retrospective study by Gosk [3] describes 6 cases.

The diagnosis can be difficult to suspect due to the vagueness of the symptoms. Loss of sensitivity in the deltoid area and hypotrophy of deltoid and teres muscles are absent: this tends to exclude a quadrilateral space syndrome due to chronic compression of the

axillary nerve. However, since a shoulder MRI is the final common pathway of many pain syndromes in that area, a correct diagnosis is very likely not to be missed.

Their removal is a safe procedure; a complete surgical excision of the tumor is possible sparing the nerve fascicles and avoiding neurological deficits. We pursue, whenever possible, an intracapsular excision of neuromas: the results obtained after extracapsular and intracapsular removal of schwannomas clearly show the latter to be a safer technique due to a lower risk of complications and without a significative rate of recurrences.

Conclusion

Our team has a great experience in peripheral nerve tumours located either in the main nerve trunks or in the plexuses.

Our series count more than 700 operated cases but this is the first observation of a schwannoma in the quadrilateral space of Velpeau (we had an other similar case which proved to be a metastasis).

This rare occurrence is well documented both with MRI and intraoperative imaging. With this observation also we confirm as the schwannomas can well be removed without neurological consequences.

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