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Case Report

Seven years surveillance of an incidental schwannoma

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ABSTRACT

Schwannomas are rare benign neoplasms, arising from Schwann cells of the peripheral nerve sheath. Retroperitoneal location is very rare accounting for less than 3% of cases. Schwannomas are usually asymptomatic and incidentally found. A rare case of a retroperitoneal schwannoma incidentally found, in 73 years-old women is herein. The tumour was found on a routine CT-scan and the patient was asymptomatic. CT-guided biopsy was compatible with a benign schwannoma. Since the patient was elderly and had no symptoms, surveillance was decided by oncological multidisciplinary group. At present, the patient has a 7 year follow up period, remains asymptomatic and the tumour dimensions are stable. Since schwannomas are benign tumours, when asymptomatic and grow slowly, watchful waiting approach may be an option, avoiding major high morbidity procedure.

Keywords: Schwannoma, Retroperitoneal, Surveillance, Incidentaloma

INTRODUCTION

Schwannomas, or neurilemmomas, are rare well-circumscribed, encapsulated, and slow-growing tumours, arising from Schwann cells of the peripheral nerve sheath.[1] They predominantly affect females between 30 and 50 decade of life and the most common location is head and neck regions being the retroperitoneal location very rare with only 0.3-3% of cases reported in the literature.[2]

Schwannomas are benign neoplasms, and the malignant transformation is extremely rare, however, might be as high as 5-18% in the presence of type 2 neurofibromatosis.[2]

These tumours are often asymptomatic and usually incidentally found through abdominal imaging exams, for example through computed tomography (CT). On the other hand, schwannomas may present with non-specific symptoms, usually dependent on their size and location. When symptomatic they present with symptoms related to mass effect and compression of surrounding structures.[2,3]

CT scan and magnetic resonance imaging (MRI) may provide information about degenerative changes such as cystic degeneration, haemorrhage, necrosis, and calcification. However, those finding are not specific and further evaluation is needed.[1]

Tissue biopsy trough ultrasonography fine needle aspiration (EUS-FNA) or CT-guided core needle biopsy, may establish a diagnosis avoiding an unnecessary diagnostic surgical resection. However, this technique might be challenging, due to tumour inaccessibility and associated with high rates of misdiagnosis.[4,5]

Schwannomas histological characteristics are spindle-shaped cells with immunohistochemical staining for S-100 protein.[6]

Surgical resection is the only curative treatment and is mainly indicated in the presence of symptoms, however, is not free from potential major complications. When schwannoma's capsule is adherent, dissection near

nervous and vascular structures may be challenging and associated with massive bleeding or nerve route damage, conferring greater morbidity associated with the procedure. There are still no data to support superiority of early surgical intervention over a radiological surveillance.[7]

This case report presents a case of an incidentally found, asymptomatic, retro-psoas muscle schwannoma, not resected, with 7 years surveillance.

CASE REPORT

A 73-years-old woman with past medical history of hypertension, dyslipidaemia, and urolithiasis, was sent to general surgery consultation with an abdominal CT scan revealing an incidental paravertebral mass, posterior to left psoas muscle. The mass characteristics were not clear, and the diagnosis hypothesis were abscess, hematoma or tumour (Figure 1).

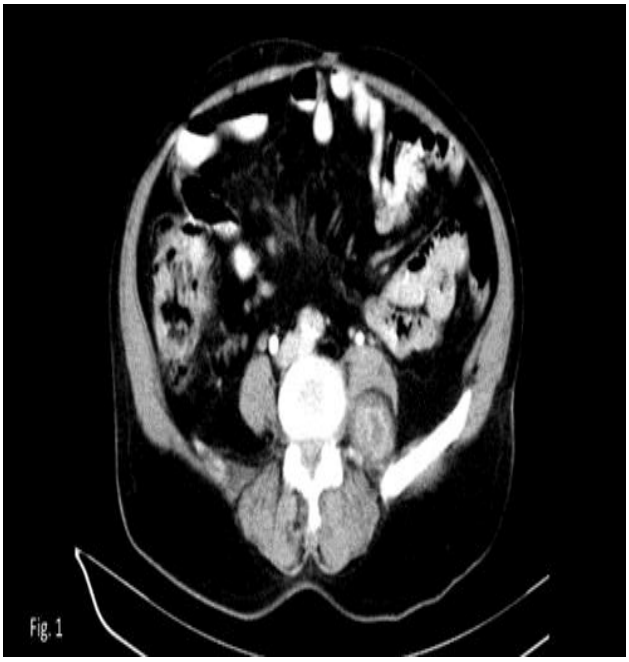

Figure 1: Abdomino-pelvic CT scan revealing a mass in paravertebral location, posteriorly to psoas muscle.

The patient was completely asymptomatic and there were no changes on physical examination, laboratory tests-namely hemogram, renal function and liver tests.

For further clarification, an abdomino-pelvic MRI was ordered, which revealed a 45×30×40 mm, well circumscribed lesion, in a paravertebral location behind the left psoas muscle. There was no invasion of adjacent structures (Figure 2). Thereafter, the patient was submitted to a CT-guided core needle biopsy, which revealed mesenchymal spindle-shaped cells, without necrosis areas or mitosis. Immunohistochemical staining was positive for S-100 protein and for vimentin. Altogether these characteristics were compatible with a benign schwannoma (Figure 3).

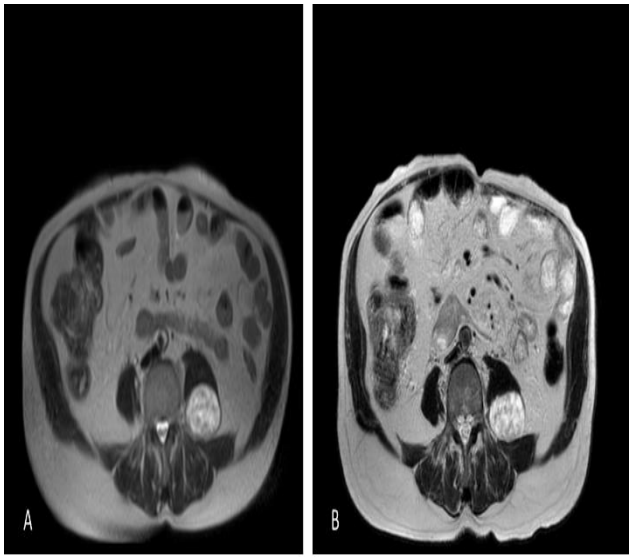

Figure 2 (A and B): First MRI revealing an ovoid, well delimited, 45×30×40 mm, paravertebral and posterior to left psoas muscle mass. Last MRI, 7 years later revealing same dimensions schwannoma.

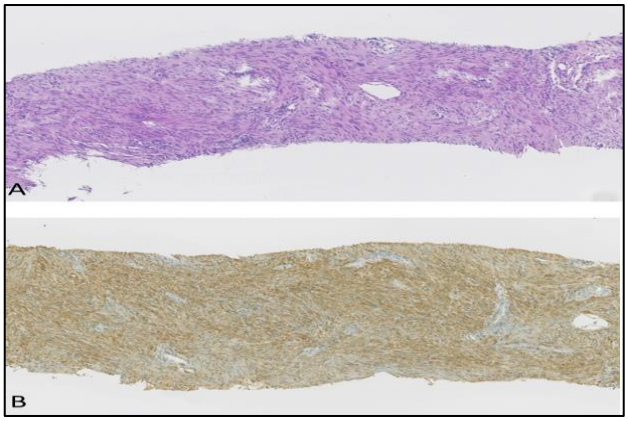

Figure 3 (A and B): Anatomopathological examination revealing spindle-shaped tumour cells show characteristics of a neurogenic tumour on haematoxylin and eosin staining; protein s-100 staining.

Since it was a benign lesion in an elderly asymptomatic patient, it was decided for a watchful waiting approach with serial annual MRI follow up.

During the seven years of follow up, the patient remained asymptomatic and schwannoma dimensions remained stable.

DISCUSSION

Schwannomas, also known as neurilemmomas, are rare benign neoplasms arising from the nerve sheath. Most common locations are the head and neck regions. Retroperitoneal is rare location and accounts for only 0.3-3% of cases. These tumours may be completely asymptomatic and incidentally found or may present with non-specific pain and mass effect symptoms, when

compressing adjacent organs or structures. According to the literature available, malignant transformation of schwannomas is extremely infrequent.[2,3]

Schwannomas are better evaluated through combination of CT and MRI, that allow assessment of tumour composition and relation to adjacent anatomical structures. CT usually reveals well-defined, heterogeneous mass and may establish tumour composition (cystic, necrotic, haemorrhagic or calcifications), whereas MRI is fundamental to determine the relationship with surrounding structures and to identification features suggestive of malignancy, like the vascular architecture. However, these tumours lack specific radiological features, and diagnosis is commonly confirmed with tissue biopsy or conventional surgical resection.[1,8]

CT-guided core needle biopsy or EUS-FNA, have been reported as a way of making a diagnosis for these lesions, allowing assessment the tumour type and identify a schwannoma.[4]

Berger-Richardson et al conducted a recent meta-analysis among 358 biopsies showing that this procedure is associated with exceptionally low both early and late complication rates (3.1 and 0.5%, respectively). Besides, an accurate tumour diagnosis was made in the majority of the cases (86%) and tumour seeding was reported in just one case.[5]

Histologically, schwannomas consist of spindle-shaped cells divided into hypercellular (Antoni type A) and hypocellular (Antoni type B) organized areas. The immunohistochemical stains for S-100 protein which is strongly expressed by most cells of schwannoma and confirms the neuroectodermal origin of the tumour cells.[1,6]

Schwannomas growth pattern and behaviour remains mostly unknown because it is based on case studies or small single-centre case series. However, the transatlantic Australasian retroperitoneal sarcoma working group (TARPSWG) evaluated schwannomas natural history, based on data from 485 patients and tumour characteristics. This group stratified the patients who could be managed conservatively or surgically, and determine postoperative imaging surveillance.[7]

Asymptomatic schwannomas, with no clear indication for immediate resection, as in this case report, can be monitored, regarding growth pattern, with at least 3 scans over a 2 year-follow up period. In this case there is a 7-years follow up, with no further tumour growth.[7]

According to TARPSWG early indications for surgery include symptomatic tumour at presentation, diagnostic uncertainty, and evidence of rapid expansion of the lesion, or patient preference since surgical resection might be associated with high morbidity. Despite benign, retroperitoneal schwannomas are hard, unyielding, firmly adherent to surrounding critical structures. In that way, it is wise to consider a surveillance approach instead a surgical resection in a completely asymptomatic patient.[7]

CONCLUSION

This case report describes a case of an elderly patient with a benign, asymptomatic slow growth schwannoma, with a 7-years surveillance period and that avoided a major high morbidity procedure so far. This endorses that watchful waiting approach is feasible. However, more trials and investigation are needed, to distinguish cases of schwannomas approached through watchful waiting from those that should be promptly submitted to surgical resection.

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