A case of retroperitoneal ancient schwannoma: US and CT findings

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Section: Abdominal imaging
Technique: CT
Case Type: Clinical Cases
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Patient: 34 years, male

Clinical History:

The patient presented with right flank pain and fever (37.5°C).

Imaging Findings:

The patient presented with right flank pain and fever (37.5°C). His previous medical history was unremarkable. Physical examination revealed tenderness on the right costovertebral angle. Urinalysis did not show the presence of haematuria, bacteria or urinary stones. The patient underwent renal sonography that revealed a well-defined round retroperitoneal mass with multi-cystic appearance, situated in the paracaval region between the right kidney and the psoas muscle (not shown). For further evaluation of this mass, contrast-enhanced abdominal CT was subsequently performed and revealed a heterogeneously enhancing, well-marginated, 6cm soft-tissue mass with cystic components, strictly contiguous with the psoas muscle (Figs 1a,b). Low-attenuation necrotic areas within the mass were also observed. The mass did not infiltrate the surrounding structures, but compressed and displaced the inferior vena cava, as accurately depicted on reconstructions of the CT images (Figs 1c,d).

The lesion was excised and surgically removed without difficulty, through an anterior surgical plane, and a final diagnosis was made histologically.

Discussion:

Ancient schwannomas, are a subtype of neurilemomas characterised by notable degenerative changes. They are tumours of long duration, deriving from the peripheral nerve sheath, usually discovered in middle-aged patients. Frequently they present as oval or round, well-demarcated and encapsulated masses. Degenerative changes are represented by cyst formation, as in this case, calcification, hyalinisation, and haemorrhage. The latter degenerative features are more likely to occur in large tumours, especially in elderly individuals. Retroperitoneal ancient schwannomas are generally asymptomatic and discovered incidentally, since they generally must reach a large size to compress adjacent structures, and subsequently to produce symptoms. These patients, when symptomatic, complain of lumbar pain, a sensation of heaviness and a palpable abdominal mass, as a consequence of the space-occupying lesion. Ancient schwannomas are extremely rare, especially when localised in the retroperitoneum; to date this is the third case reported in the literature. In this case the tumour did not infiltrate the surrounding structures and could be removed without difficulty.
Ultrasound can be useful to characterise this tumor, because of its ability to identify the presence of cystic areas or calcification. In this case the tumour appeared to be heterogeneous, hyperechoic and containing prominent cystic components; however, no calcifications were detected, which have been previously reported as characteristic specific features. The CT appearance of peripheral neurilemmomas has been described as a well-demarcated round or oval mass showing prominent cystic degeneration and calcification. These masses are homogeneous on unenhanced scan and heterogeneous with roughly ring-shaped enhancement after contrast administration. The heterogeneous contrast enhancement is due to the presence of cystic and haemorrhagic changes, and reflects the variation in the degree of cellularity and loose cellularity, with prominent diffuse oedematous change which may result in minimal contrast enhancement. Well-defined round masses with multiple cystic necrotic areas were seen in this case, and we believe these findings are characteristic of retroperitoneal ancient schwannoma.

In conclusion, when a cystic, well-marginated mass, with heterogeneous attenuation appearance, is incidentally detected on contrast-enhanced CT examination, the radiologist should be aware of the possibility of an ancient schwannoma. This tumour is usually benign with an excellent prognosis and does not require radical surgery.

**Differential Diagnosis List:** Retroperitoneal ancient schwannoma

**Final Diagnosis:** Retroperitoneal ancient schwannoma

**References:**


Description: Contrast-enhanced abdominal spiral CT scan (axial view) shows a paracaval well-margined mass. The mass arises lateral to the lumbar vertebral body. Origin:
Description: Contrast-enhanced abdominal spiral CT scan (axial view) shows a paracaval well-marginated mass. The mass arises lateral to the lumbar vertebral body and displaces medially the inferior vena cava. It is strictly contiguous with the ipsilateral ileolumbar muscle, and shows heterogeneous enhancement due to the presence of cystic and necrotic degeneration. **Origin:**
**Description:** Contrast-enhanced abdominal spiral CT scan (coronal reconstructions) shows a paracaval well-marginated mass. The mass arises lateral to the lumbar vertebral body and displaces medially the inferior vena cava. It is strictly contiguous with the ipsilateral ileolumbar muscle, and shows heterogeneous enhancement due to the presence of cystic and necrotic degeneration. **Origin:**
Description: Contrast-enhanced abdominal spiral CT scan (sagittal reconstruction) shows a paracaval well-marginated mass. The mass arises lateral to the lumbar vertebral body and displaces medially the inferior vena cava. It is strictly contiguous with the ipsilateral ileolumbar muscle, and shows heterogeneous enhancement due to the presence of cystic and necrotic degeneration. Origin: