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A Rare Case of Retroperitoneal Schwannoma Mimicking an Adrenal Mass

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Description

Retroperitoneal schwannomas are uncommon tumors that originate from peripheral nerve sheath cells. They often present as incidental findings or with non-specific symptoms, posing a diagnostic challenge, especially when they mimic other retroperitoneal structures, such as adrenal masses. We report a rare case of a retroperitoneal schwannoma that mimicked an adrenal mass, emphasizing the importance of considering such differential diagnoses in the evaluation of retroperitoneal tumors.

Schwannomas are benign neoplasms originating from Schwann cells, which are responsible for the myelination of peripheral nerves. These tumors can arise from various nerve structures throughout the body, and when they occur within the retroperitoneal space, they are referred to as retroperitoneal schwannomas. Although retroperitoneal schwannomas are rare, they pose a unique diagnostic challenge due to their diverse clinical presentations and potential to mimic other structures, such as adrenal masses.

A 43-year-old female presented to our medical center with complaints of abdominal discomfort and a palpable mass in the left upper quadrant of her abdomen. The patient's medical history was unremarkable, and there were no classic symptoms associated with adrenal tumors, such as uncontrolled hypertension or endocrine abnormalities.

Physical examination revealed a non-tender, firm, and palpable mass in the left upper quadrant of the abdomen. There were no signs of Cushing's syndrome, pheochromocytoma, or any other adrenal-related hormonal disorders.

Abdominal ultrasound showed a well-defined, heterogeneous mass measuring approximately 6 cm in diameter, located adjacent to the left adrenal gland. Due to the uncertainty of the mass's origin and the possibility of an adrenal tumor, further imaging studies were performed.

Contrast-enhanced abdominal Computed Tomography (CT) revealed a solid, enhancing mass with attenuation characteristics similar to the adjacent adrenal gland, making it indistinguishable from the adrenal tissue.

Given the concern for an adrenal mass, laboratory tests were performed, including measurements of plasma and urine metanephrines, cortisol levels, and *adrenocorticotropic* hormone (ACTH). All hormonal tests returned within normal ranges, and there were no biochemical indications of pheochromocytoma or other adrenal-related disorders.

The patient subsequently underwent laparoscopic surgical exploration. Intraoperatively, the tumor was found to be separate from the left adrenal gland but was closely associated with it. The mass was successfully resected with a margin of normal tissue.

Histopathological examination confirmed a diagnosis of schwannoma. Immunohistochemical staining for S-100 protein, a marker for neural tissue, supported the diagnosis. The patient had an uneventful postoperative recovery and remained asymptomatic during follow-up.

Discussion

Retroperitoneal schwannomas are rare tumors originating from peripheral nerves in the retroperitoneal space. Their presentation can vary widely, but they often present as asymptomatic masses or with non-specific symptoms, making the diagnosis challenging. In this case, the retroperitoneal schwannoma was initially mistaken for an adrenal mass due to its location and similar imaging characteristics on CT.

The differentiation between retroperitoneal schwannomas and adrenal masses can be particularly challenging, as both can exhibit similar radiographic features. Radiological findings alone are often insufficient to distinguish between the two entities. While imaging techniques like CT can provide valuable information, the definitive diagnosis relies on histopathological examination, as in this case.

Schwannomas are typically encapsulated and composed of spindle cells with Antoni A and Antoni B areas. Immunohistochemical staining for S-100 protein is a valuable tool to confirm the diagnosis, as schwannomas consistently express this marker.

Despite their benign nature, retroperitoneal schwannomas should be surgically resected when identified to prevent potential complications, including mass effect on adjacent structures, pain, or, rarely, malignant transformation.

Conclusion

Retroperitoneal schwannomas are uncommon neoplasms that can mimic other retroperitoneal structures, such as adrenal masses. The case presented here underscores the importance of considering this differential diagnosis when evaluating patients with abdominal masses, even when clinical symptoms are non-specific or absent. Accurate diagnosis and surgical management are essential to provide optimal patient care and prevent potential complications associated with retroperitoneal schwannomas.

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