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Commentary

A Non-Functional Bladder Paragangliomas Occurrence after Trauma

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DESCRIPTION

Paragangliomas are rare tumors that can be functional (secreting catecholamines) or non-functional (not secreting catecholamines). They account for less than 0.06% of all bladder cases of cancer. Catecholamine hypersecretion or the influence of the bulk causes symptoms. Paragangliomas are occasionally discovered by chance in asymptomatic patients' imaging exams. Histological features such as diffuse pattern of development, localized clear cells, necrosis, and even muscle invasion with cautery artefact might be mistaken for bladder cancer, especially in cases of non-functional Paragangliomas with no evident symptoms. Because each disease has a unique therapeutic approach, clinical suspicion and accurate diagnosis are critical. They present the case of a female patient with ultrasound suspicion of bladder cancer that had transurethral excision of the tumor and had Paragangliomas confirmed by anatomopathological and Immunohistochemically results.

The patient was asymptomatic from a urological perspective, but was referred due to a bladder lesion found by chance during a total abdominal ultrasound to investigate abdominal pain. The patient had high blood pressure, type 2 diabetes, and was a former smoker. The ultra-sonographic result was an echoic image in the bladder's posterior wall measuring 1.1 and 1.2 cm, with Doppler ultrasonography revealing vascular flow. Using a diathermy loop, a bladder lesion measuring 1.5 cm was removed through cystoscopy and endoscopic resection [1].

The surgery went perfectly, and the patient was discharged on the second postoperative day. Paraganglioma was identified after a histopathologic study of the surgical material in the Pathology Department, and a biopsy revealed that the margins were impacted by neoplasia. The expression of chromogranin A (DAK-A3) and synaptophysin was shown to be positive in the Immunohistochemically analysis (DAK-SYNAP). Paraganglioma was confirmed by immunostaining for the polyclonal S-100 protein, which revealed a sustentacular pattern. The patient is being followed up as an outpatient regardless of the fact that a postoperative Magnetic Resonance Imaging (MRI) of the abdomen shows no bladder damage or extra vesical suspicion of Paragangliomas.

Paragangliomas are chromaffin tissue neoplasms of the sympathetic nervous system that originate from of the layers of the bladder wall. When there are symptoms of hypersecretion of catecholamines, such as headaches, palpitations, fainting, and visual abnormalities, this tumor should be considered. However, as it does not always produce catecholamines, it may go undiagnosed for years. In routine imaging exams that show the likelihood of bladder cancer, non-functional bladder Paragangliomas are frequently seen. Small intramural lesions may be exacerbated following the injection of contrast in MRI, however bigger lesions lose the uniformity of attenuation due to necrotic regions, making this neoplasm indistinguishable from other types of tumors in most modalities of imaging. In these tumors, the signal strength on T2 weighted images can be very high, allowing for their detection [2,3].

Though the metaiodobenzylguanidine is highly specific for pheochromocytoma and thus useful for differentiating between functional and nonfunctional tumors, it is less sensitive for detecting Paragangliomas than MRI. Pathological examination confirmed the diagnosis in this case. The most common forms of bladder cancer are papillary or invasive urothelial tumours, with other types of cancer being uncommon. Because Paragangliomas exhibit histological similarity to the most prevalent bladder malignancies, pathological interpretation is usually based on clinical suspicion [4,5].

The Paragangliomas is often made of cells with a 'zellballen' pattern (cell balls in German) and rich eosinophilic or amphiphilic cytoplasm, separated by fragile vascular stroma. When Paragangliomas form in the deep layers of the bladder wall, they influence their own muscle layer, making the differential diagnosis even more difficult with a tendency to diagnose urothelial cancer.

The case report emphasised the importance of recognizing this rare disease, keeping in mind the possibility of urothelial carcinoma as a differential diagnosis. It compares the imaging, pathological, and Immunohistochemically examinations conducted on these two diseases.

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