JBR–BTR, 2011, 94: 336-338.

SECONDARY RETROPERITONEAL TERATOMA

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Retroperitonal teratomas are rare. We report on a case of a retroperitoneal secondary localisation of a gonadal teratoma in a patient who had developed primary testicular teratoma 12 years previously.
The retroperitoneal mass was detected with an abdominal CT requested for the management of a non-specific abdominal pain. CT and MRI examinations showed cystic retroperitoneal masses combined with calcifications and peripheral enhancement. Review of the literature is presented, including the common differential diagnoses to be considered.

Key-word: Teratoma.

Case report

A 34-year-old man was admitted in our emergency department for abdominal pain of two weeks duration. The pain had begun slowly for one year but recently increased. An acute renal colic was suspected as the cause for pain in another institution. Spasmolitic therapy was initiated, without success. Upon admission in our hospital, blood tests revealed only a C-Reactive Protein at the upper limit of the normal (1 mg/dl).

Abdominal Ct was performed with a multi-detector scanner (40 rows) using a tri-phasic acquisition mode (without and with intravenous iodine contrast injection, and acquisition on arterial and portal time).

Two cystic retro-peritoneal masses with septation, multiple calcifications and peripheral enhancement were noted: the first was situated behind the duodenum and pancreas, compressing the vena cava inferior and measures 87 × 35 mm; the second was in front of the aorta, measuring 35 × 20 mm (Fig. 1).

MRI was required in order to have a better understanding of the components of the masses. It helped to confirm the information of the CT examinations, showing heterogeneous areas of hypo and hyper intense T2 signal and iso intense T1 signal into the retroperitoneal mass. Calcifications were suspected, and fat component in the masses was ruled out (Fig. 2).

A deeper anamnesis revealed a previous history of right orchidectomy for non-seminomatous tumour in 1998, concluding to a teratoma with initial lombo-aortic nodes. At the time, surgery was followed by chemotherapy and radiotherapy, without specific follow-up, as far as we know.

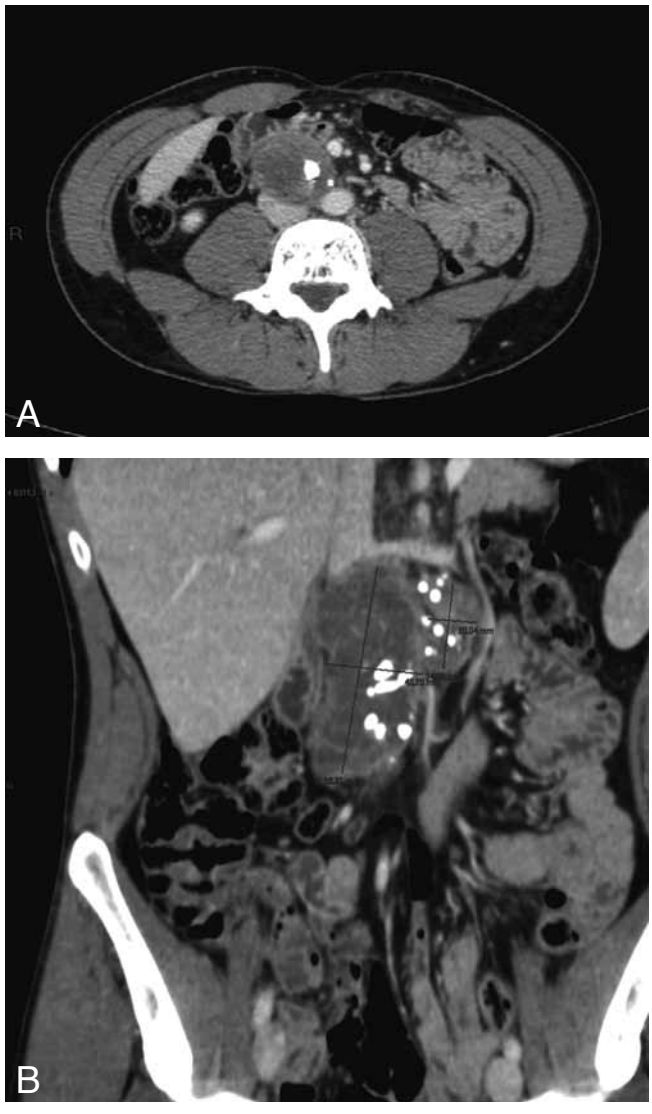

Fig. 1. — Axial (A), coronal and sagittal (B) CT views of the two cystic and calcified retro-peritoneal masses.

Biopsy of the retroperitoneal masses was performed under echo-endoscopic guidance. Histology

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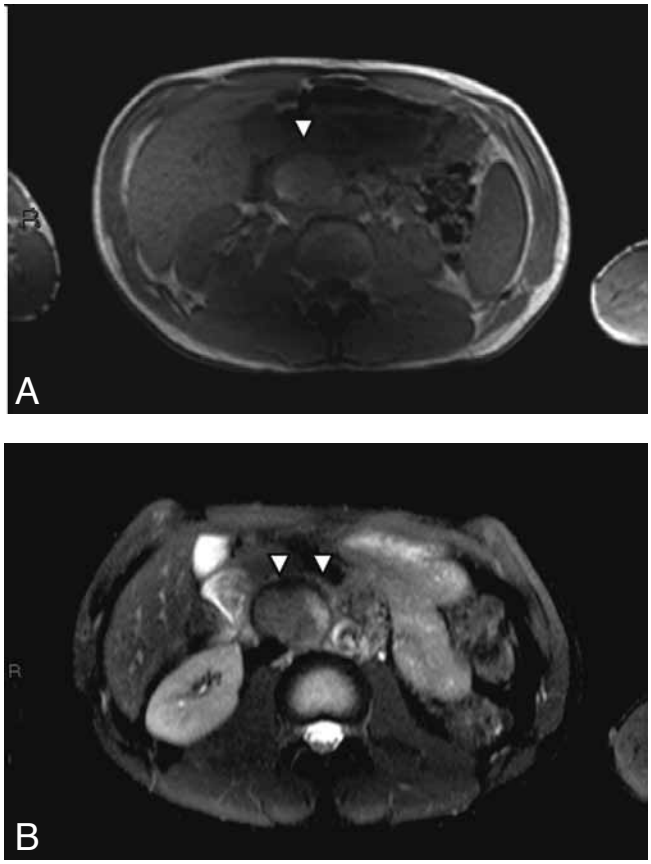

Fig. 2. — MRI of the abdomen. A. without contrast: transverse view showing an iso-intense signal on T1 weighted image into the mass (arrowhead).
B: hypo and hyper intense signal on T2 weighted image of the retroperitoneal mass (arrowheads).

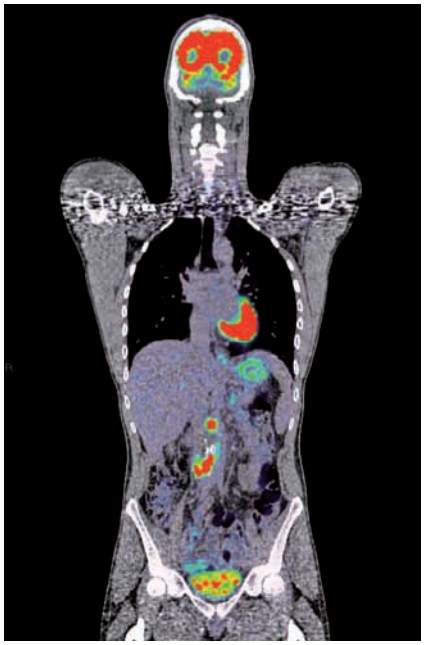

Fig. 3. — Heterogeneous hypermetabolic activity of the retroperitoneal masses on Pet-CT (arrows).

failed to detect malignant cells. Despite this non-contributive result, a Pet-CT was performed, in order to investigate extra-abdominal localisations of the tumour. The examination showed a heterogeneous hypermetabolic activity in the lesion occupying the retroperitoneal area (Fig. 3). Blood tests indicated an increased level of the alpha-protein (590 ng/ml, nl: < 9 ng/mL).

Testicular ultrasound did not show any suspicious mass in the unique testis.

Lymphadenectomy was performed. Histological findings of the retroperitoneal mass concluded to a mature teratoma and an embryolo - gical carcinoma. Chemotherapy was associated in the post-operative period. The long term follow-up was complicated with a progressive disease, including recurrence of retroperitoneal masses, lung metastases and mediastinal lymph nodes. At the present time (two years after the lymphadectectomy), the patient is still under chemotherapy, with persistence of mediastinal lymph nodes and lung metastases. The level of alpha-protein is still high (4408 ng/mL).

Discussion

Retroperitoneal teratomas are uncommon in the adult population: primary retroperitoneal teratomas represent 1 to 11% of the retroperitoneal neoplasms (1). There are usually asymptomatic, but can cause non specific abdominal disorders including pain, nausea and vomiting (2). This disorder is important to diagnose because 26% are malignant when there are detected in adults (3). Beside, primary extragonadal germ cell tumours in the retroperitoneum are very rare and should be considered as metastases of an active or burned-out testicular cancer until proven otherwise (4, 5). Alfa-foeto-protein can be increase in case of malignant teratoma (6).

In our case, a retroperitoneal mixed mass was detected with CT. This lesion was initially considered as a primary tumour. Detailed anamnesis revealed a previous testis teratoma 12 years previously, converting the initially primary retroperitoneal mass as a high suspicion of secondary location of the initial teratoma, which was finally confirmed by surgery.

As in our case, the review of the literature concludes that the clinical presentation of such a retroperitoneal mass is non specific. The role of imaging is to orientate the diagnosis (5). CT-scan can give information about the structure of the mass, which can be of two types: solid or cystic.

CT and MRI contribute to detecting the three components of the solid type (tissular, fatty and calcified components) and to identifying the cystic type (with or without fat or calcium component). The cystic type may contain enhanced septations (7).

The presence of the different components help to suggest the correct diagnosis on the basis of imaging, but surgery is required for the final diagnosis.

Differential diagnosis includes secondary location of ovarian carcinoma, sarcoma (when fat is present, then liposarcoma has to be evocated), testicular metastases, neurogenic mass, tuberculosis, Kaposi sarcoma, Castelman disease and growing teratoma syndrome (development of a mature teratoma following chemotherapy for non seminomatous tumor, as in our case).

When we consider retroperitoneal cystic masses, the following possibilities are to be included: the neoplastic conditions include cystic lymphangioma, mucinous cystadenoma, cystic teratoma, cystic mesothelioma, Müllerian cyst, epidermoid cyst, tailgut cyst, bronchogenic cyst, pseudomyxoma retroperitonei, and perianal mucinous carcinoma; non-neoplastic disorders include pancreatic pseudocyst, lymphocele, urinoma and hematoma (8).

In patients with nonseminomatous germ cell tumours of the testis, retroperitoneal lymphadenectomy is frequently performed after chemotherapy, for resection of residual masses (9, 10). At histology, fibrosis, necrosis or mature teratoma can be observed (10). When residual malignant cells are noted, it is related to a very poor prognosis (9).

Retroperitoneal lymphadenectomy is related to per-operative vascular injuries in more than 20 % of the cases, most frequently located to the inferior vena cava, then the renal arteries and the aorta (11). In most of the cases, surgical repair is made immediately, with a good outcome.

Conclusion

Secondary localisation of retroperitoneal teratoma is uncommon. CT is contributive for the suggestion of the correct diagnosis, by showing cystic retro-peritoneal masses with septation, multiple calcifications and parietal enhancement. In patients with previous story of testicular neoplasm, secondary location of the disease is one of the diagnostic possibilities.

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