Interesting image

Intestinal metastases as an unusual presentation of a burned-out testicular seminoma: PET/CT imaging

Presentación inusual como metástasis intestinales de un seminoma testicular con regresión espontánea

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A 64-year-old man had a concentric thickening of the proximal duodenum depicted by CT (Fig. 1). Subsequent endoscopic examination and biopsy led to the diagnosis of malignancy. PET/CT confirmed the hypermetabolic proximal duodenal lesion and showed two unexpected additional 18F-FDG-avid tumors not seen on the initial CT at the distal duodenum and jejunum (Fig. 2). The patient underwent resection of all three lesions, which showed histological evidence of metastases from testicular seminoma. Subsequent ultrasound showed an atrophic right testis (Fig. 3) with areas of hypo-echogenicity and echogenic calcifications. The histology of the resected right testis was consistent with a burned-out seminoma.

Extragonadal germ cell tumors may originate from primary neoplasms or more frequently represent metastases from occult/burned-out primary testicular malignancy. The former category is very rare, with localization mainly in the median line of the body and involving the central nervous system such as pineal body, neurohypophysis and sacrococcygeal regions, thymus, mediastinum and retroperitoneum.1,2 Primary seminomatous lesions account for about half of these tumors.1 The pathogenesis of these primary neoplasms includes the migratory failure of primordial germ cells from the urogenital ridge to the scrotum and the persistence of totipotential cells after embryogenesis at future tumoral sites.1,2 Concerning metastases from malignant germ cell tumors of testicles including seminomas, they have an orderly ipsilateral lymphatic dissemination and a less common hematogenous spread.1 The right testis tumor usually metastasizes to the interaortocaval nodal chain by L2 level. The left testicular lesion spreads to left retroperitoneal nodes in an area delimited by the left renal vein, abdominal aorta, left ureter and inferior mesenteric artery. Right-to-left crossover nodal involvement may be seen with left supraclavicular metastasis. At advanced stages, tumors may spread to iliac and inguinal nodes, and to distant organs hematogenously. This case showed an atypical hematogenous dissemination to the gastrointestinal tract without the usual lymphatic metastasis. Burned-out testicular germ cell tumors represent spontaneously regressed malignancies by either immunological or ischemic processes with no obvious existing primary neoplasm at the time of diagnosis of related distant metastasis.1,2 When the neoplastic origin of the distant metastasis is established, in-depth clinical, imaging and histological evaluation of testes is necessary for the search of vestigial clues of burned-out testicular malignancy. Sonographic features of burned out testicular tumors include focal atrophy, scarring, echogenic calcifications, hypoechoic zones and/or a combinations of all these findings.1,2 Histologically, the presence of hematoxyphilic bodies, hemosiderin pigmentation and calcium phosphate deposits constitutes the evidence of tumor cell death and regression.1,3

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http://dx.doi.org/10.1016/j.remn.2014.11.006
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Fig. 2. Composite PET/CT image (sequences from left to right: axial, sagittal and coronal views) showing the hypermetabolic proximal duodenal mass with two additional $^{18}$F-FDG-avid lesions at the distal duodenum and jejunum (arrows), not conspicuous on the initial CT.

Fig. 3. Composite sonographic image of both testes, for comparison purpose, showing a normal left testicle (right image) and an atrophic right testis with areas of hypo-echogenicity and echogenic calcifications related to burned-out testicular tumor (left image, arrows).

Conflict of interest
None.

References