Interesting image

$^{18}$FDG PET/CT imaging of schwannoma mimicking colorectal cancer metastasis

$^{18}$FDG PET/TAC de un schwannoma simulando una metástasis de cáncer colorrectal


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A R T I C L E  I N F O

Article history:
Received 16 October 2012
Accepted 28 November 2012

Schwannomas typically arise from spinal nerve roots of the cervical, sympathetic, vagus, peroneal, and ulnar nerves in the head, neck, and flexor surfaces of the upper and lower extremities. Most of these tumors are solitary and unassociated with neurofibromatosis type 1, although they frequently occur in patients with this disease. They commonly present as non-specific masses that are associated with a peripheral nerve. A small proportion of these tumors can undergo sarcomatous change de novo. Several reports indicate that schwannoma has a wide range of FDG uptakes on PET imaging depending on the degree of its cellularity.1–3 They display a characteristic dual pattern with areas that are highly cellular (Antony A) and less cellular (Antony B) and the degree of cellularity varies widely among lesions, for this reason they can present a wide range of SUVs (from 0.33 to 3.7 and 1.9 to 7.2). The use of a higher cut-off range cannot be a useful indicator for differentiation of benign vs malignant schwannomas, for this reason FDG PET

![Fig. 1. $^{18}$F-FDG PET/CT scan (transaxial view, upper row) shows a liver metastasis (arrow) in left hepatic lobe (segment II) of 19 mm and SUVmax 10.4. Perisplenic fluid (arrow head) and central hepatectomy (short arrow) is also observed. Lower row shows nodular lesion adjacent to the right sacroiliac joint (arrow). This lesion is medial to the psoas-iliac muscle with a 13 mm of length and a SUVmax 6.0.](image)

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is limited value as a prospective diagnostic imaging technique for the assessment of benign versus malignant schwannoma. However, PET can be useful to detect recurrence of malignant schwannoma. However, the reason high FDG accumulation is found in benign tumors such as schwannoma remains unclear, and the higher FDG SUVs in Beaulieu series did not correlate with increased tumor size or Ki-67 index. They postulate that maybe overexpression of one of the glucose transporter proteins (GLUT-3) by tumor cells could provide an explanation.

A 74-year-old man operated of colorectal cancer, located in sigma, and liver metastases (well differentiated adenocarcinoma pT3N1(2/6)M1V1, stage D Dukes with borders affected), presenting a new known hepatic metastasis, was referred to our hospital for re-evaluation with 18FDG PET/CT before surgery of the lesion and colonic reconstruction. Acquisition was undertaken in a Siemens Biograph 6 True Point PET/CT camera after injection of 370 MBq with a CT protocol acquisition using intravenous iodine contrast (volume 130 ml; flow 2.5 ml/s). In the study a nodular lesion adjacent to the right sacroiliac joint is also detected (Fig. 1). As it was not possible to exclude metastatic disease, the oncologist decided chemotherapy treatment and evaluate hepatic response and behaviour of this new nodular lesion.

Fig. 2. Transaxial view (upper row) shows reduction in size of the liver metastasis with absence of FDG uptake indicating complete metabolic response, but the nodular lesion (coronal view, lower row) persisted showing the same size (13 mm) and SUVmax 5.6 (arrow).

After three chemotherapy cycles another 18FDG PET/CT scan was performed (the patient was still receiving systemic treatment: Capecitabine). Transaxial and coronal views (Fig. 2) show reduction in size of the liver metastasis with absence of FDG uptake indicating complete metabolic response, but the nodular lesion (coronal view) persisted showing the same size (13 mm) and SUVmax 5.6 (arrow). As it was of extreme importance exclusion of extrahepatic metastatic disease a core needle biopsy was undertaken. The histologic result was fusocellular tumor without atypia suggestive of schwannoma. The patient was finally operated for the liver metastasis and colonic reconstruction.

References