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Dr Gopinath Gnanasegaran

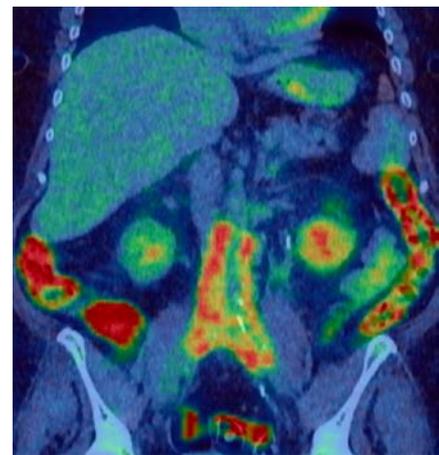
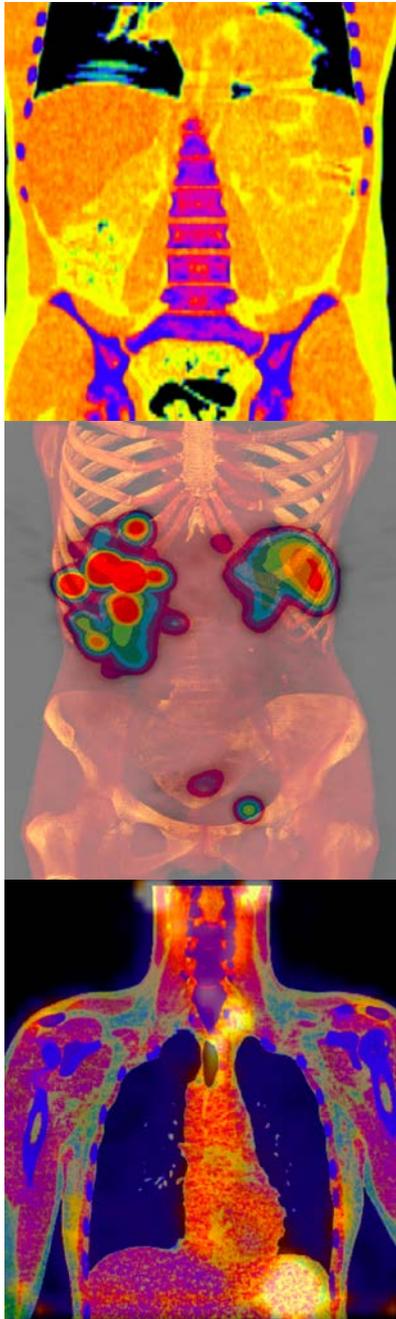
F-18 FDG PET/CT in Retroperitoneal Fibrosis

Author: Shaunak Navalkisoor

Royal Free London NHS Foundation Trust

CLINICAL DETAILS

A 60-year-old lady who presented with abdominal pain had a CT scan, which showed a retroperitoneal mass and left sided hydronephrosis. She was referred for a FDG PET ? Retroperitoneal fibrosis



SCAN FINDINGS

FIGURE 1 (Coronal F-18 FDG PET, PET/CT and CT of PET/CT image): There is extensive tracer avid abnormal retroperitoneal soft tissue extending from the level of the renal veins down into the pelvis, along the common iliac vessels bilaterally to approximately the bifurcation of the common iliac vessels. The abnormal soft tissue encases both the aorta and IVC extending laterally to abut the psoas muscles. No avid lymphadenopathy. **Interpretation:** Scan features are classical appearances of active retroperitoneal fibrosis

DISCUSSION

Idiopathic retroperitoneal fibrosis (RPF) is a fibroinflammatory disease characterised by chronic inflammatory tissue surrounding the aorta and iliac arteries. The fibroinflammatory tissue consists of inflammatory cells e.g. lymphocytes, plasma cells, macrophages and fibrous tissue (fibroblasts and myofibroblasts). It is a rare condition, having an incidence of 1.38 per 100,000 people (1).

Most cases of RPF are idiopathic and is thought to be related to an immune mediated response to severe atherosclerosis (2). Secondary RPF can also occur. These can be as a result of malignancies, medications, infections, trauma, surgery and previous radiation. The most common presenting symptoms experienced are dull abdominal, back or flank pain (3). The main complication of RPF is acute renal failure secondary to fibrotic tissue surrounding the ureters leading to outflow obstruction (4). The treatment of RPF involves corticosteroids +/- immunomodulating medications. If there is ureteric/ vascular involvement, surgery may be needed (5).

The diagnosis is primarily based on imaging. Cross-sectional imaging (CT/MRI) is usually the first line investigation. The typical CT appearance is of a well-demarcated paraspinal retroperitoneal mass surrounding the abdominal aorta and iliac arteries (3). Ureteral encasement/ deviation is frequently also seen. Primary retroperitoneal neoplasms (e.g. lymphoma) or metastatic retroperitoneal tumours can produce a desmoplastic reaction that can mimic RPF, the differentiation may not be easy to make on cross-sectional imaging.

F-18 FDG PET/CT is not routinely used in RPF but is useful in certain instances. These include when the diagnosis of RPF is unclear, to differentiate a malignant cause from idiopathic RPF, to determine response to treatment and to determine disease activity (6). F-18 FDG PET/CT is useful to differentiate lymphoma from RPF with demonstration of hypermetabolic lymph nodes differentiating these conditions (7). F-18 FDG PET/CT has been shown to be able to demonstrate response to treatment with decrease in FDG correlating with reduced inflammatory markers (3). F-18 FDG PET/CT may also be useful to demonstrate suspected relapse or to determine disease activity after stopping steroids and is superior to CT in these regards (8).

KEY POINT

F-18 FDG PET/CT is not routinely used in RPF

F-18 FDG PET/CT is useful (a) when the diagnosis of RPF is unclear, (b) to differentiate a malignant cause from idiopathic RPF, (c) to determine response to treatment and (d) to determine disease activity

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AUTHOR'S: DISCLOSURE STATEMENT

The author reports no potential conflict of interest in relation to this article

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