

Presentation of genital tuberculosis detected on [¹⁸F]FDG PET-CT scan resembling a primary gynaecological tumour and metastases

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Abstract

This report presents [¹⁸F]Fluorodeoxyglucose ([¹⁸F]FDG) positron emission tomography-computed tomography (PET-CT) findings of a 33-year-old woman before and after tuberculostatic therapy. Tuberculosis (TB) should be kept in mind in the differential diagnosis of [¹⁸F]FDG avid lesions in the genital tract.

KEY words: genital tuberculosis; [¹⁸F]FDG PET/CT; extrapulmonary tuberculosis; therapeutic response to tuberculostatic treatment

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A 33-year-old female presented at the hospital with a complaint of pelvic pain and tenderness in the right lower quadrant. Abdominal Computed Tomography (CT) revealed multiple enlarged abdominal lymph nodes.

¹⁸F-Fluorodeoxyglucose ([¹⁸F]FDG) positron emission tomography-computed tomography (PET-CT) was performed with suspicion of malignancy.

Maximum intensity projection (MIP) PET images (Fig. 1G) and sectional CT and PET-CT images showed increased radiotracer uptakes at right ovoid mass with a Maximum Standardised Uptake Value (SUV max) of 15.70 and endometrial wall thickening and intracavitary mass that extends to vagina with SUV max of 15.09. Additionally, several enlarged nodes with increased FDG uptakes prominently in abdominopelvic regions (Fig. 1A–D) and diffuse reticulonodular infiltrates and nodules randomly distributed in both lungs, prominently in upper lobes with mild FDG uptakes (Fig. 1E–F) were detected.

Histopathological examination of the cervical biopsy showed granulomatous inflammation (Fig. 2). Findings suggested multi-systemic tuberculosis.

Follow-up PET-CT examination after 9 months of tuberculostatic treatment showed diminished nodal uptakes and a complete metabolic response in endometrium and right adnexal mass. There was also regression in most of the lung parenchymal lesions (Fig. 3A–G).

Genital tuberculosis (TB) is frequently seen among women of reproductive age. It is mostly transmitted to the genital tract haematogenously from pulmonary or other sites of TB. The fallopian tubes are mostly affected organs followed by endometrial and ovarian involvement. Vagina, vulva and cervix are rarely involved. Atypical clinical signs such as infertility, menstrual irregularities and pelvic pain may be seen. Standard anti-tuberculous drugs are used to treat genital TB and higher response rates are reported.

[¹⁸F]FDG accumulates at the sites of infection and inflammation via increased glucose metabolism of activated inflammatory and infectious cells. So, [¹⁸F]FDG PET-CT is an additive, useful imaging modality in both diagnosis and monitoring response to therapy of infectious-inflammatory diseases such as tuberculosis. This case is discussed in order to emphasize the importance of considering the possibility of tuberculosis in the differential diagnosis of [¹⁸F]FDG avid malignant appearing lesions in the genital tract detected on [¹⁸F]FDG PET-CT scan.

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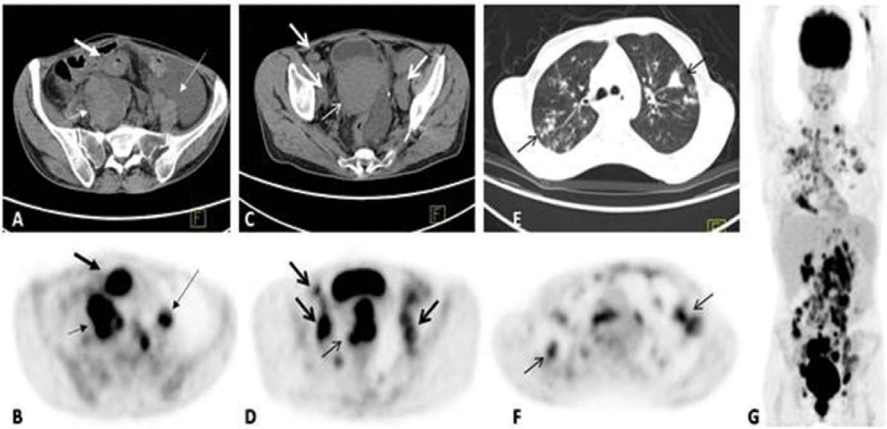


Figure 1. [^{18}F]FDG PET-CT scan showing increased [^{18}F]FDG uptakes at right ovo adnexal mass, endometrium [Maximum Standardised Uptake Value (SUVmax)] 15.70 and 15.09 respectively; **A–D.** Thin white and black arrows; lymph nodes at several regions prominently in abdominopelvic regions (SUVmax 13.16); **C, D.** White and black thick arrows and parenchymal lung lesions (SUVmax 9.96); **E, F.** Arrows; Intense accumulation of [^{18}F]FDG in multiple lymph nodes, both lungs and genital tract can completely be seen on Maximum intensity projection image (MIP) of [^{18}F]FDG PET/CT scan (**G**)

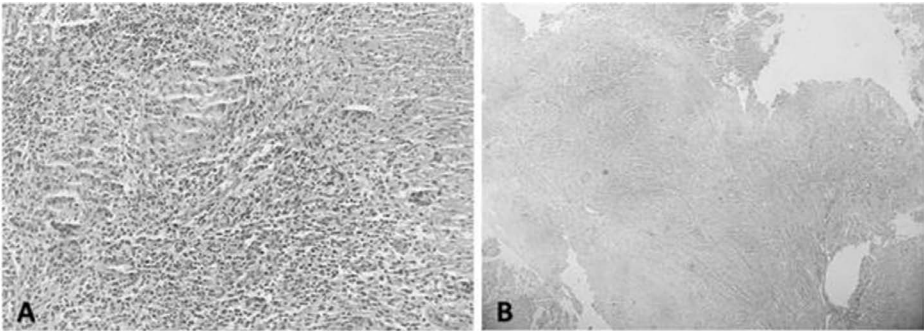


Figure 2. Cervical biopsy showing granulomatous inflammation

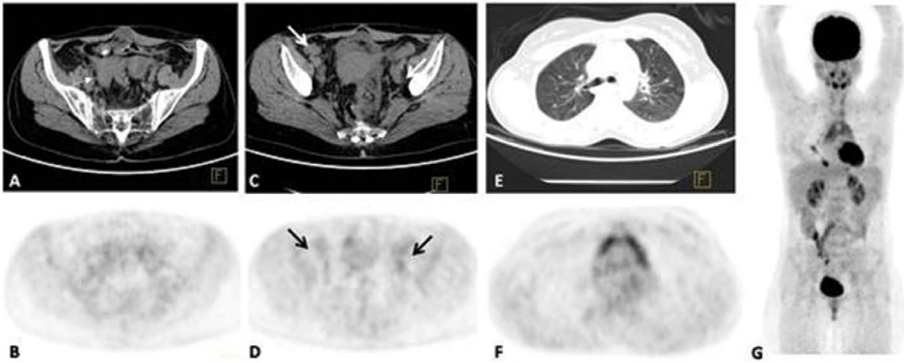


Figure 3. Follow-up [^{18}F]FDG PET-CT scan showing prominent metabolic response to tuberculostatic treatment

Conflict of interest

The authors declare that they have no conflict of interest.

Informed consent

Informed consent was obtained from the patient included in this report.