CASE REPORT

Positron emission tomography features of hidradenitis suppurativa

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ABSTRACT. A 35-year-old male with classical Hodgkin's lymphoma (nodular sclerosing, grade 1 histology, clinical stage 2A) underwent a positron emission tomography (PET) scan to assess response to treatment. Half body CT PET imaging was obtained using a Siemens Biograph scanner from eyes to thighs. 405 MBq of 18-fluorodeoxyglucose (FDG) was injected with acquisition starting at 60 min. There was unexpected intense focal uptake in the superficial subcutaneous tissues of the abdomen, pelvis and lateral chest wall with overlying skin thickening seen on the CT component. This was initially of concern, but the patient was known to have a history of hidradenitis suppurativa (HS). On further examination, the radiological abnormalities corresponded to the clinical sites of involvement. To the best of our knowledge, this is the first documentation of the appearance of HS on PET scan.

Received 14 May 2010
Revised 19 July 2010
Accepted 6 October 2010

DOI: 10.1259/bjr/74184796

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A 35-year-old male with classic Hodgkin's lymphoma (nodular sclerosing, grade 1 histology, clinical stage 2A) underwent a positron emission tomography (PET) scan to assess response to treatment. Half-body CT PET imaging was obtained using a Siemens Biograph Scanner (Siemens Medical Solutions) from the patient's eyes to thighs. 405 MBq of ¹⁸fluorodeoxyglucose (FDG) was injected with acquisition starting at 60 min. There was unexpected intense focal uptake in the superficial subcutaneous tissues of the abdomen, pelvis and lateral chest wall (Figures 1 and 2) with overlying skin thickening seen on the CT component. This initially created concern from the reporting radiologist as additional diagnoses of skin infection or subcutaneous lymphoma (although unlikely) were considered. However, the patient was known to have a medical history of hidradenitis suppurativa (HS). On further examination, the radiological abnormalities corresponded to the clinical sites of involvement (Figure 3a,b). To the best of our knowledge, this is the first documentation of the appearance of HS on a PET scan.

HS is a chronic, recurrent, suppurative cutaneous condition manifested by comedones, abscesses, fistulating sinus tracts and scarring. Lesions occur mainly in apocrine gland-bearing sites, particularly the flexural skin of the axillae, anogenital and submammary regions. The diagnosis is based on clinical history and physical

examination; histology from affected skin may be obtained if diagnostic doubt exists; however, radiological or nuclear imaging methods are not used in the diagnosis or management of this condition. As a result, imaging features of HS are infrequently described in the literature.

In 2005, Kelly [1] reported the findings of skin thickening, subcutaneous induration and peripheral rim enhancement after intravenous contrast on MRI in a patient with Crohn's disease who was subsequently diagnosed with HS. Prior to publication of these

Figure 1. Focal uptake of ¹⁸fluorodeoxyglucose in the superficial abdominal subcutaneous tissues.

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Figure 2. Focal uptake of ^{18}F fluorodeoxyglucose in the superficial subcutaneous tissues of the lateral chest wall and axillary regions.

(a)

(b)

Figure 3. Clinical features of hidradenitis suppurativa of (a) the right axilla and lateral chest wall and (b) a close up showing inflamed nodules and scarring. The comedones (circled) are highly characteristic of this disease.

findings, two other authors had described radiological features of the complications of HS rather than imaging of the disease itself. Nadgir et al [2] reported peri-rectal sinus tract and fistula formation on double-contrast barium enema and Russ [3] published MRI features of a lumbosacral epidural abscess.

PET scanning is a nuclear imaging method used in the diagnosis and staging of malignancy and shows increased uptake of the substrate by any tumour. The imaging method involves the injection of a chemical compound labelled with a short lived positron-emitting radionuclide. In this case, the substrate was FDG. The substrate is taken up at sites with increased metabolism and gamma rays emitted by positrons at sites of uptake are then detected as "hot spots".

False-positive results in the subcutaneous tissues may be seen at sites of increased metabolism including

infection, post-intramuscular and subcutaneous injections, sarcoidosis and post-operatively.

The incidental radiological features of HS on a PET scan that we have described demonstrate the importance of clinicopathological correlation when unexpected uptake is seen in the skin.

References

1. Kelly AM, Cronin P. MRI features of hidradenitis suppurativa and review of the literature. *AJR Am J Roentgenol* 2005;185:1201–4.
2. Nagdir R, Rubesin SE, Levine MS. Perirectal sinus tracks and fistulas caused by hidradenitis suppurativa. *AJR Am J Roentgenol* 2001;177:476–7.
3. Russ E, Castillo M. Lumbosacral epidural abscess due to hidradenitis suppurativa. *AJR Am J Roentgenol* 2002;178:770–1.