

Disseminated metastatic penile squamous cell carcinoma detected by fluorodeoxyglucose PET/computerized tomography

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ABSTRACT

Penile cancer is an uncommon malignancy which of the management depends on the clinical stage and location of the lesion. Positron emission tomography/computerized tomography (PET/CT) is a promising method for detection of distant metastatic lesions and therapeutic strategy planning. Here, we report a case of penile squamous cell carcinoma of 57-year-old male patient, was referred to PET/CT department for investigation of metastases. There were significantly increased fluoro-18 fluorodeoxyglucose activities in supradiaphragmatic and infradiaphragmatic lymphatic stations.

Keywords: Fluorodeoxyglucose, nodal involvement, penile squamous cancer, Positron emission tomography/computerized tomography

INTRODUCTION

Squamous cell carcinoma (SCC) of the penile is an uncommon malignancy. It usually appears in the epithelium of the inner prepuce and glans.^[1] Risk factors contain unhygienic conditions such as phimosis and chronic inflammatory disease, sexual history, condylomata history and smoking.^[2,3] The management depends on the clinical stage and the location of the lesion. Penile cancer drains principally to the inguinal nodes and then spreads to the pelvic lymph nodes.^[4,5]

If tumor-positive inguinal nodes are demonstrated, scanning methods must be used to search pelvic metastases and distant metastases for the increasing risk of further lymphatic spread.^[6-8] Positron emission tomography/computerized tomography (PET/CT) scanning is a reliable method to determine pelvic and more distant metastases.^[9,10] If PET/CT is not available abdominal CT scan and chest x-ray are advisable and in symptomatic M1 patients a bone scan is also advisable.^[1] The aim of this case report is to represent the

significance of fluoro-18 fluorodeoxyglucose (¹⁸F-FDG) PET/CT detected by the metastases in a patient with penile carcinoma [Figures 1 and 2].

CASE REPORT

We report a case of a 57-year-old male demonstrated inguinal metastases with biopsy then underwent amputation and recognized histopathological grade 2 (moderately differentiated) penile SCC. The patient was referred to our PET/CT department to search for possible further metastatic disease. Following 10 h fasting (serum glucose level 126 mg/dl), the patient was injected with 14.5 mCi F-18 of fluorodeoxyglucose (FDG) intravenously. After 1 h waiting period, whole-body images were obtained on the Siemens HI-REZ PET/CT System. Fused images of metabolic (PET) and anatomic (CT) information were reviewed. PET/CT study showed that intense accumulation of FDG on inguinal lymph nodes. Additionally, increased FDG uptake was detected on multiple lymphadenomegalies in abdomen-pelvis and the left-inferior jugular region, the left supraclavicular fossa and the mediastinal lymph nodes [Figures 1 and 2]. Also, PET images demonstrated a few uptakes in the left axilla and left parasternal lymph nodes. The lung parenchyma, liver and skeletal system demonstrated a physiological distribution of the tracer. Histopathological results showed primary penile SCC carcinoma [Figure 3a] and metastatic inguinal lymph nodes [Figure 3b].

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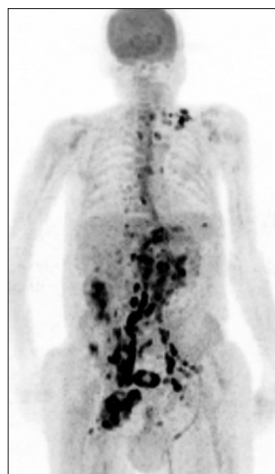


Figure 1: Fluorodeoxyglucose (FDG) PET MIP image showed that intense accumulation of FDG on inguinal lymph nodes and increased FDG uptake was detected on multiple lymphadenomegalies in abdomen-pelvis and the left-inferior jugular region, the left supraclavicular fossa and the mediastinal lymph nodes

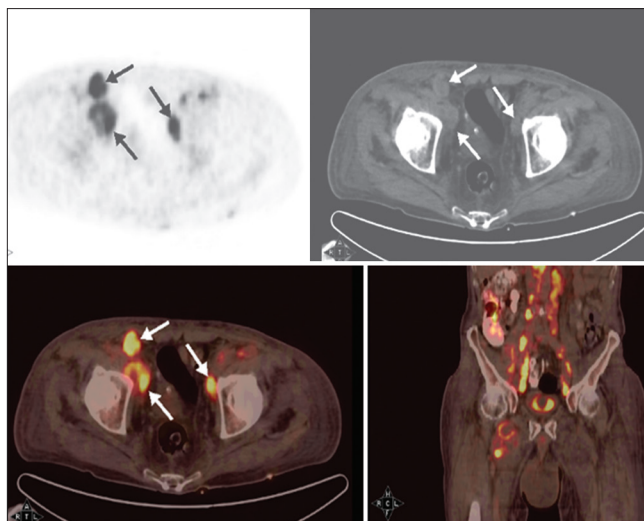


Figure 2: Pelvis axial PET, computed tomography, fusion and coronal fusion images showed multiple lymphadenomegalies in the iliac region

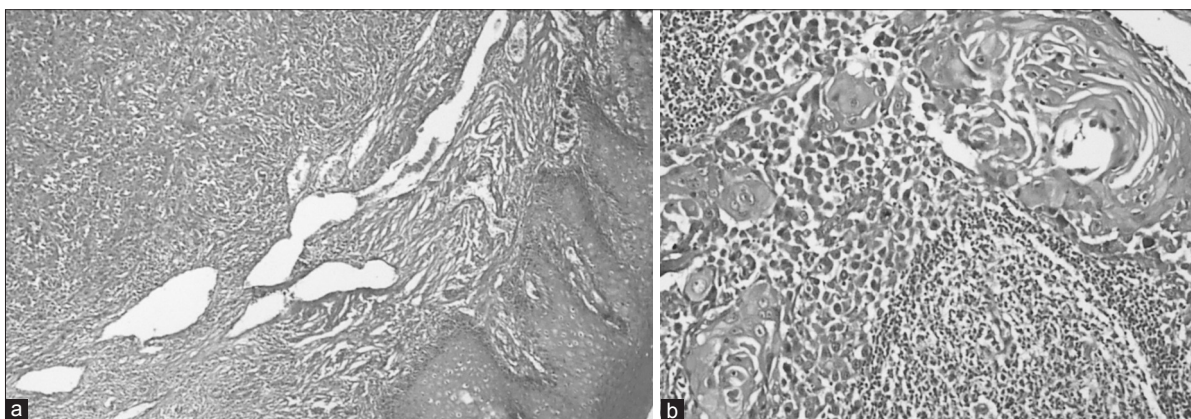


Figure 3a-b: Histopathological examination showed well differentiated squamous cells with keratinization and transition zone which is concordant with primary penile squamous cancer and squamous cells with central keratinization in inguinal metastatic lymph node (H and E, ×100)

DISCUSSION

Penile carcinoma has a lymphogenic pattern of metastases and the firstly drain inguinal lymph nodes and subsequently pelvic nodes. The detection of pelvic metastases and more distant metastases has a considerable impact on therapy and prognosis.^[4,5]

Initial F-18 FDG-PET scanning is a promising method on detecting loco regional lymph node metastases and distant metastases in the stage of penile cancer. However, conventional imaging techniques such as CT scans are insufficient to detect pelvic nodal involvement in penile cancer patients.^[9,10] FDG-PET with low-dose CT scanning provide to scan whole body and also give functional, anatomic information on one image. Correct staging is crucial in the selection of appropriate treatments and the follow-up the patients. The use of PET/CT provides considerable much knowledge of TNM clinical classification of penile cancer.

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