18F-FDG PET/CT in a Case of Malignant Priapism Secondary to Metastasis From Mucoid Adenocarcinoma of the Cecum

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Abstract: Metastatic tumors of the penis are rare, with priapism as the predominant symptom in a significant number of cases. The genitourinary tract and rectum are the most common primary sites. FDG PET/CT has established role in detection of distant metastasis in various malignancies. The authors describe a case of mucoid adenocarcinoma of cecum, presented with priapism after right hemicolectomy, where FDG PET/CT showed intense tracer uptake throughout the enlarged penis, which was later confirmed as metastatic adenocarcinoma by trucut biopsy.

Key Words: 18F-FDG, PET/CT, malignant priapism, carcinoma cecum

PROCEDURE

A 68-year-old male presented with priapism after right hemicolectomy for mucoid adenocarcinoma of the cecum. He had had a percutaneous nephrostomy tube for right upper quadrant obstruction due to meta static cecal adenocarcinoma with right hydronephrosis. He underwent right hemicolectomy with end ileostomy and temporary nephrostomy. He was commenced on 18F-FDG PET/CT in the postoperative period for detection of metastatic disease. The PET/CT showed intense tracer uptake throughout the penis (Figure 1). A trucut biopsy of the penis confirmed metastatic adenocarcinoma (Figure 2).

REFERENCES

A 56-year-old man, with a history of mucoid adenocarcinoma of the cecum, presented with priapism 3 months after right hemicolectomy. A distal corpo granular shunt was placed, but priapism persisted and ulcerations developed in the glans penis. The patient underwent $^{18}$F fluorodeoxyglucose (FDG) PET/CT to identify any metastatic involvement. The maximum intensity projection image (A) showed multiple foci of FDG uptake in the thorax and both inguinal regions. On the sagittal CT and PET/CT images (B, C), the penis appeared enlarged with diffusely increased tracer uptake. The findings were confirmed on the axial pelvic images (C–F), which also showed involvement of multiple inguinal lymph nodes bilaterally. Trucut biopsy from the penis suggested metastatic adenocarcinoma. Fine needle aspiration from the inguinal lymph nodes was also consistent with metastatic adenocarcinoma. $^{18}$F-FDG uptake in the penis has been described in conditions like primary malignancy of penis, lymphoma, and dilated urethra. Metastatic tumors of the penis have been previously described but are rare. Proximity to the rectum, bladder, and prostate makes them common primary sites for metastatic tumors of the penis. Various mechanisms for penile metastasis, like retrograde venous spread, retrograde lymphatic spread, arterial embolism, and local direct extension, have been proposed. Retrograde venous spread from the pudendal area into the dorsal venous system of the penis is considered to be the most likely mechanism. This explains why most reports document lesions in the corpora cavernosa, but the glans may be equally involved. The main symptoms of metastatic spread to the penis include pain, induration, urethral obstruction, and hematuria. Priapism may also occur and may be the predominant symptom in up to 40% of cases. Priapism has been previously described secondary to metastases from genitourinary malignancies and rectal carcinoma. Penile metastases are unlikely to be solitary, and treatment should focus on palliative control, which may be achieved by radiotherapy, systemic chemotherapy, or in selected refractory cases, surgery. $^{18}$F-FDG PET/CT is helpful in primary penile cancer in detecting lymph nodal involvement. Penile metastasis usually indicates widespread metastatic disease, and hence FDG PET/CT may be useful to identify other sites of disease involvement and for monitoring treatment response.