

Inguinoscrotal Bladder Hernia Mimicking Testicle Tumor

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ABSTRACT: Bladder hernias usually begin asymptotically and are discovered incidentally at the time of discovery. Preoperative diagnosis of bladder hernias is important to reduce the risk of bladder injury during surgery. Although F-18 FDG PET/CT is applied for oncological purposes, benign conditions should also be taken into account when evaluating the implants. In this article, a case of bladder hernia, which can be confused with pathological cancer involvement, with the diagnosis of F-18 FDG PET/CT performed in a 73-year-old male patient with renal cell carcinoma is presented.

KEYWORDS: Hernia, PET-CT, testicle tumor, bladder hernia

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Introduction

Inguinal bladder hernia is a very rare condition. Most of the patients are male and the hernia is right-sided. Previously research had shown that common in men between ages 50 and 70.¹ Bladder hernias often have an asymptomatic onset and are detected incidentally during exploration. It is important not to confuse ISBH with metastatic involvement and it is also important to preoperative diagnosis of bladder hernias in patients with pelvic malignancy to reduce the risk of bladder injury during surgery but most of them cannot be diagnosed preoperatively.² We describe a case of bladder hernia, which was diagnosed with F-18 FDG PET/CT performed in a patient with renal cell carcinoma and may be confused with pathological involvement of cancer.

Case Presentation

F-18 FDG PET/CT imaging was performed in a 73-year-old male patient diagnosed with renal cell carcinoma for staging. F-18 FDG PET CT images showed FDG uptake associated with primary malignancy in the left kidney and there is no pathological uptake in the right kidney. PET/CT

images revealed hypermetabolic pulmonary nodules and mediastinal lymph nodes suggesting metastatic disease. An additional suspicious hypermetabolic focus mimicking testicular pathology was observed in the right scrotum. Fused axial PET/CT images showed radiotracer accumulation in the right inguinoscrotal region with SUVmax 8.2 which was suggesting a testicle malignancy (Figure 1). Images were examined in detail and we concluded that the bladder was herniated into the right inguinal canal in the CT images. SUVmax of inguinoscrotal hernia was equal to the bladder activity.

Discussion

Urinary system activity can be a source of misinterpretation in PET/CT images because of renal, ureteral, and bladder uptake or skin contamination, especially when PET images are evaluated alone. In PET/CT hybrid systems, CT offers a unique opportunity to explain the anatomical changes. It is very important in the treatment management of the patient that FDG uptake due to inguinoscrotal hernia should not be confused with metastatic involvement.

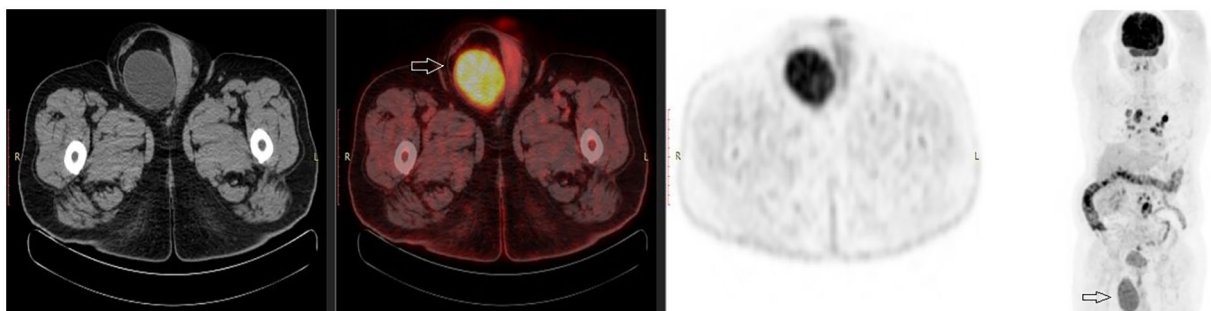


Figure 1. F-18 FDG accumulation in the right inguinoscrotal region on PET/CT images and hypodense lesion in this area on CT images (arrow). Involvement in the right inguinoscrotal area at the same level as the bladder in MIP images (arrow).



Bladder hernia reaching the scrotum is very rare and is more common in overweight patients over the age of 50. There is also a statistically significant relationship between prostate volume and inguinoscrotal hernia.³ The gold standard diagnostic technique for bladder herniation is ultrasound. Other diagnostic methods include excretory urography, cystoscopy, and cystography. Studies have shown that it can be detected incidentally during cancer imaging in asymptomatic patients. Similar to our case, there is a case of prostate cancer that is confused with nodal recurrence when only PET images are evaluated in ⁶⁸Ga PSMA-11 PET/CT published by Shahlaei et al.⁴ The rate of preoperative detection of bladder hernias has increased in recent years. One reason for this is the increased frequency of use of CT in the diagnosis of inguinal hernias. Another reason is the increase in asymptomatic detection rates in scintigraphy and PET/CT imaging in patients with malignancy.⁵

Conclusion

In conclusion, inguinoscrotal bladder hernia should be considered as one of the causes of inguinal abnormalities and it should not be confused with metastatic involvement when evaluating PET/CT images. Although PET/CT is mainly used in the diagnosis of malignant tumors in our clinical practice, benign pathologies, normal variants as well as anatomical deformities can be detected in PET/CT interpretation.

Author Contributions

Interpreted PET/CT images: CS, FD and GM. Wrote the first draft of the manuscript: CS and FD. Agree with manuscript

results and conclusions: CS and GM. Jointly developed the structure and arguments for the paper: CS and FD. Agree with manuscript results and conclusions: GG and ES. Made critical revisions and approved final version: GG and ES. All authors reviewed and approved of the final manuscript.

Ethics Committee Approval

The study protocol was approved by Celal Bayar University Faculty of Medicine Ethics Committee (decree number 20.478.486/1069).

Patient Consent for Publication

All procedures followed were in accordance with the ethical standards of the responsible committee on human experimentation (institutional and national) and with the Helsinki Declaration of 1975, as revised in 2008. Informed consent was obtained from all patients for being included in the study.

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