



Incidental “Urinoma” in ¹⁸F-FDG PET/CT Scan

¹⁸F-FDG PET/BT Taramasında Tesadüfî “Ürinoma”

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Abstract

¹⁸F-FDG PET/CT scanning was performed for the primary staging of a 47-year-old man with urothelial carcinoma. The patient underwent biopsy by ureteroscopy 15 days ago and the PET images revealed ¹⁸F-FDG accumulation in the right retroperitoneal region, compatible with an “urinoma”.

Keywords: Urothelial carcinoma, urinoma, positron emission tomography

Öz

Kırk yedi yaşındaki ürotelyal kanserli erkek hastaya primer evreleme için ¹⁸F-FDG PET/BT görüntüleme yapıldı. ¹⁸F-FDG PET/BT görüntülemesinden 15 gün önce üreteroskopi ile biyopsi yapılan hastanın sağ retroperitoneal bölgesinde “ürinoma” ile uyumlu ¹⁸F-FDG birikimi gözlemlendi.

Anahtar kelimeler: Ürotelyal kanser, ürinom, pozitron emisyon tomografi

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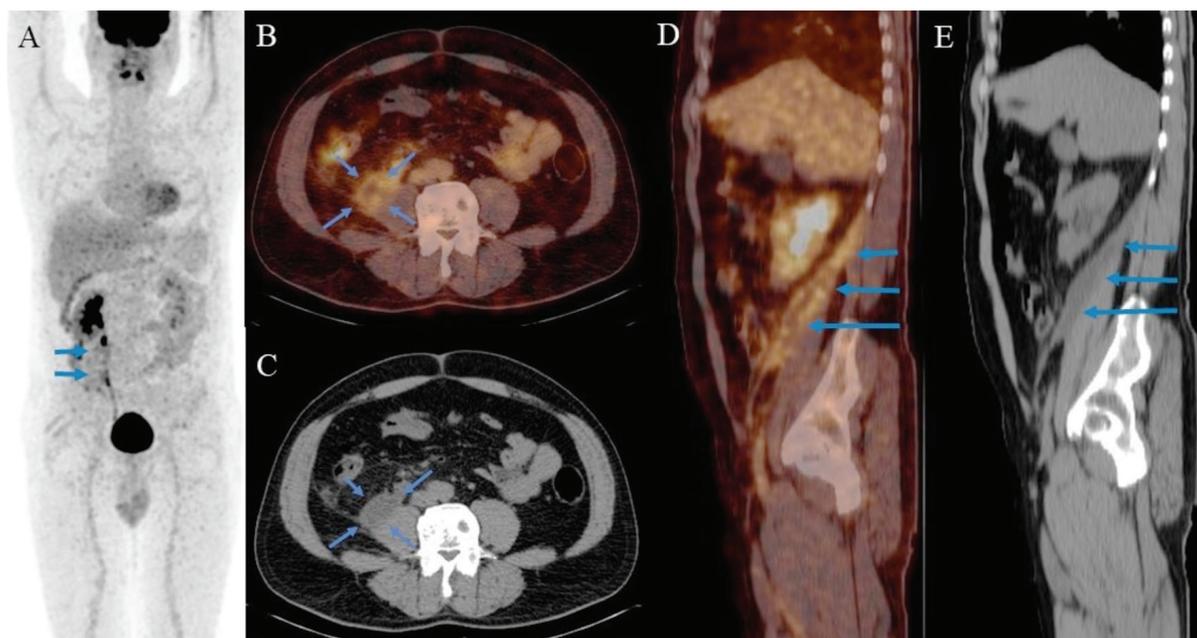


Figure 1. A 47-year-old man with a diagnosis of urothelial carcinoma was referred for primary staging with ¹⁸F-FDG PET/CT scan. The ¹⁸F-FDG PET/CT scanning was performed 15 days after ureteroscopic biopsy. Imaging was performed 60 minutes after I.V. injection of 395 MBq ¹⁸F-FDG, on an integrated 16 slice PET/CT, with scanning from the skull base to the knee. ¹⁸F-FDG PET/CT images [(A) MIP; (B) axial fusion; (C) axial CT; (D) sagittal fusion; (E) sagittal CT) showed tracer accumulation in the fluid collection extending to the pelvis along the retroperitoneal area (SUV_{max}: 4.90, mean density; 1 Hounsfield units), associated with the right ureter, in the right iliopsoas region adjacent to the muscle (A-E blue arrows).

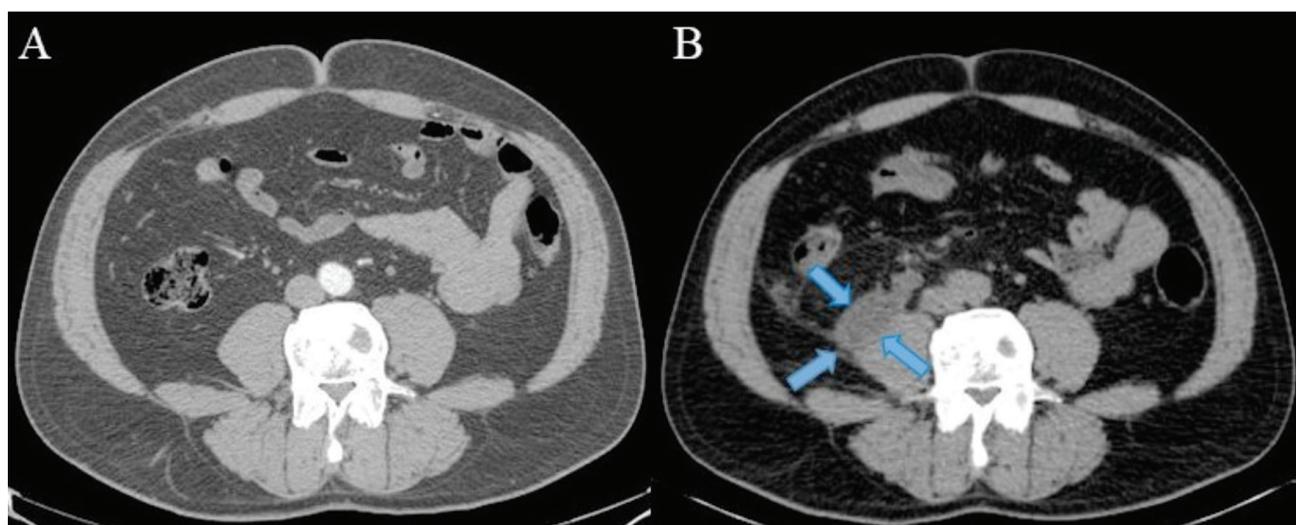


Figure 2. Contrast enhanced CT image before the biopsy (A) and CT image of PET/CT after the biopsy (B). Urinoma was shown (B blue arrows) on the right iliopsoas muscle. CT scanning results of the patient before and after the biopsy procedure were compared and it was recognized that the lesion associated with the right ureter, emerging following the biopsy procedure was a lesion in fluid density consistent with urinoma. Urinomas may be asymptomatic and occult initially, but may lead to abscess formation and electrolyte imbalances if not diagnosed and managed appropriately (1). Ureteral leaks can result from trauma, ureteral obstruction, tumors or endourologic interventional procedures (2,3,4). The second most common complication of abdominal laparoscopic surgery is ureteral injury (5). Urinomas are rare complications of ureteroscopy. The diagnosis is usually made by ultrasound or CT (2). The incidental discovery of a urinoma by ¹⁸F-FDG PET/CT was previously reported (6,7). In our case, urinoma originating from iatrogenic urinary tract injury following endourological biopsy procedure was detected incidentally on PET/CT scan.

Ethics

Informed Consent: Consent form was filled out by the patient.

Peer-review: Externally and internally peer-reviewed.

Authorship Contributions

Concept: A.G., O.Y., Design: A.G., O.Y., Data Collection or Processing: A.G., O.Y., Analysis or Interpretation: A.G., O.Y., T.Ş., D.Y., Literature Search: A.G., Writing: A.G., D.Y.

Conflict of Interest: No conflict of interest was declared by the authors.

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References

1. Titton RL, Gervais DA, Hahn PF, Harisinghani MG, Arellano RS, Mueller PR. Urine leaks and urinomas: diagnosis and imaging-guided intervention. *Radiographics* 2003;23:1133-1147.
2. Gayer G, Zissin R, Apter S, Garniek A, Ramon J, Kots E, Hertz M. Urinomas caused by ureteral injuries: CT appearance. *Abdom Imaging* 2002;27:88-92.
3. Desai MM, Gill IS, Kaouk JH, Matin SF, Novick AC. Laparoscopic partial nephrectomy with suture repair of the pelvicaliceal system. *Urology* 2003;61:99-104.
4. Ghali AM, El Malik EM, Ibrahim AI, Ismail G, Rashid M. Ureteric injuries: diagnosis, management, and outcome. *J Trauma* 1999;46:150-158.
5. Cadeddu JA, Wolfe JS Jr, Nakada S, Chen R, Shalhav A, Bishoff JT, Hamilton B, Schulam PG, Dunn M, Hoenig D, Fabrizio M, Hedican S, Averch TD. Complications of laparoscopic procedures after concentrated training in urological laparoscopy. *J Urol* 2001;166:2109-2111.
6. Sanchez MJ, Caride VJ. Incidental, early diagnosis of urinoma by F-18 FDG PET/CT. *Clin Nucl Med* 2005;30:102-104.
7. Dias AH, Ipsen P, Bouchelouche K. Incidental Diagnosis of a Large Retroperitoneal Urine Accumulation (Urinoma) on an ¹⁸F-FDG PET/CT Scan Performed for Primary Staging of Urothelial Carcinoma. *Clin Nucl Med* 2017;42:626-627.