A Giant Urinoma as a Complication of Abdominal Vascular Surgery: Case Report

Abdominal Vasküler Cerrahi Sonucu Gelişen Dev Ürinom

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ABSTRACT Urinoma formations may rise from obstructive uretero-pelvic junction anomaly and traumatic injury or infrequently seen post surgical complication of abdominal or pelvic surgeries. Here, we present a 52 year-old male patient who was operated for Leriche syndrome, and a bifurcated dacron graft interposed, with left external iliac and right femoral distal anastomosis, complicated with peritoneal fluid collection. Proximal and distal anastomoses were done with end to side fashion. An abdominal catheter was inserted for drainage. Within a week, the peritoneal fluid occurred again and late phase imaging of computed tomography (CT) scan showed a massive urinoma. Antegrade pyelographic radiograms subsequently confirmed the injured ureter and it was repaired surgically. Here, we report a case of secondary giant urinoma arose from abdomino-pelvic vascular surgery and stated the importance of dynamic CT imaging in the diagnosis.

Key Words: Urinoma; tomography, spiral computed; surgery

ÖZET Ürinomlar renal travma veya üreteropelvik bileşke obstrüksiyonu oluşturabilecek sebeplerden kaynaklanabilir. Üreteral yaralanmalar diğer bir ürinom sebebidir ve abdominal ya da pelvik cerrahilerin komplikasyonu olarak meydana gelebilir. Aorto-iliac obstructive arterial hastalık tanısıyla opere olan aorta-sol iliak, sağ femoral bypass yapılan 52 yaşında erkek hastada postoperatif dönemde batında şişlik gelişmesi nedeniyle yapılan abdominal bilgisayarlı tomografi (BT) incelemede masif sıvı koleksiyonu tespit edilerek katater ile sıvı drene edildi. Sonraki dönemde tekrar karında şişlik oluşması üzerine dinamik BT inceleme uygulandı ve geç fazlı görüntülerde sıvı ürinom olarak değerlendirildi. Yaralanan üreter segmenti antegrad pyelografi ile gösterildi ve hasta opere edildi. Bu sunumda abdominal vasküler cerrahi sonrası gelişen dev ürinoma olgusu sunularak tanıda dinamik bilgisayarlı tomografi görüntülemenin önemi vurgulanmıştır.

Anahtar Kelimeler: Ürinoma; bilgisayarlı tomografi; cerrahi

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Urinomas generally develop after renal traumas or due to reasons causing ureteropelvic junction obstructions. A ureteral injury is another reason for the development of urinomas and can be seen as a complication of abdominal or pelvic surgery. Here, we present a case of giant urinoma discovered as a complication of abdominal vascular surgery and discuss the imaging findings.

CASE REPORT

A 52 year old male patient, who had a history of coronary artery bypass surgery 10 years ago, was admitted to cardiovascular surgery clinic due to

complaints of life style limiting intermittent claudication, (Class IIb, Fontaine) which was present over the last 4 years, mainly of his left leg, with the diagnosis aorto-iliac obstructive arterial disease after clinical and laboratory examinations. Left common iliac artery was completely occluded starting from aortic bifurcation. Right common iliac artery had 50% stenosis at the origin and right external iliac artery was stenosed over 80% at a long segment. A bifurcated Dacron graft was used to construct aorta-left external iliac, right superficial femoral artery bypasses. All the proximal and distal anastomoses were performed in end to side fashion. Patient was observed in the intensive care unit for 18 hours without any hemodynamic problem. After an uneventful postoperative recovery period, he was discharged from hospital on 5th postoperative day. On postoperative 10th day, the patient attended to cardiovascular surgery outpatient clinic with the complaints of abdominal distention, lack of appetite and decrease of urinary output. Physical examination revealed extreme abdominal distention and tenderness. At direct abdominal x-ray examination, all the intestinal and colonic gaseous shadows were displaced peripherally. Abdominal ultrasonographic examination revealed massive amount of fluid collection. With the purpose of search for vascular anastomotic leak, multi-slice computed tomography (MSCT) with intravenous contrast agent was performed. This examination confirmed the diagnosis of loculated massive fluid collection, and with density determinations, we decided that the collection has serous properties (Figure 1). An abdominal catheter was inserted for diagnosis and drainage by the attending radiologist. Approximately 17 L's of serous fluid was drained in 2 days. Examination of the fluid revealed a density less than 1010, but creatinin and urea content of the fluid was not performed which led us to a misdiagnosis of giant seroma. After the completion of the drainage, the catheter was removed, but the distention of the abdomen re-appeared within 7 days. Abdominal dynamic MSCT with contrast was performed again. It was seen that, almost the same amount of fluid was collected in abdomen and in addition to this finding, late phase contrast series showed the appearance of contrast

FIGURE 1: Figure 1a,b. Abdominal multi-slice computerised tomographic images of loculated massive fluid collection deplacing intestinal structures to periphery. a. Axial image, b. Coronal image.

media in the collection (Figure 2). Also, ectazic dilatations of left kidney and proximal part of left uretery were apparent. Antegrade pyelography was performed after the insertion of a nephrostomy catheter to localize the level of ureteral injury. The collection of contrast media in the pelvic region was observed. These findings confirmed the diagnosis of left ureteral injury. Retrograde stent placement trial to left uretery was unsuccessful. Surgical exploration was decided. At the operation, it was seen that, the left uretery was completely torn. The etiology could not be decided but both ends were found at the operation and ureteroureterostomy operation was performed. After an uneventful postoperative period, the patient was discharged from hospital. On his 10th postoperative month, he is free of vascular and ureteral symptoms.

DISCUSSION

Urinomas are defined as the capsulated collection extravasated urine.[1,2] Extravasations of urine to perirenal adipose tissue cause lipolysis which leads to inflammatory and fibrotic reactions. This results with the formation of a fibrous sac surrounding the urinary collection.[3] Common causes of urinomas are posterior ureteral valve, ureteral obstructions, rarely obstructive ureteropathies such as ureteropelvic junction obstructions and renal traumas.[4] An unnoticed perforation of collective system during surgical procedures is another reason.[5] Gynecologic procedures are the reason in 50% of iatrogenic injuries to uretery, whereas urologic operations form the 30% of causes and general abdominal sur-

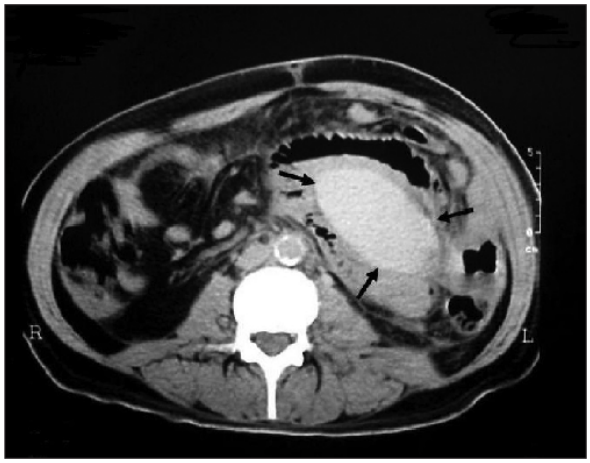

FIGURE 2: Passage of contrast media to loculated fluid collection in abdominal cavity, suggesting leak from urinary collective system, can be seen in late phases of axial multi slice computerized tomographic image. This image was obtained a week later after the drainage of the loculated fluid with catheter. It was seen that, almost the same amount of fluid was collected in abdomen (arrows).

gical procedures form 5-15%.[6-9] The etiologic reason in our case wasn't clear. It was thought to be due to inadvertent iatrogenic surgical trauma, but also ischemic local necrosis could be the causative factor, due to extensive dissection in the retroperitoneal area within the neighborhood of uretery, collateral circulation of uretery might have been compromised.

The diagnosis of uretery injuries can be made with antegrade/retrograde pyelography or computed tomography (CT). The sensitivity of intravenous pyelography for the diagnosis of ureteral injuries is reported to be 33%.[6] Scintigraphy can be useful for defining the leaks in patients in whom contrast medias can't be used.[10] CT has an important role for the diagnosis of ureteral injuries. Urine collection in different areas due to various localizations and degrees of ureteral injury or different types of urine extravasation can be determined with CT. The most common areas are pelvic lateral wall, where uterine vessels are present, ureteropelvic junction and the base of infindibulopelvic ligament. Three dimensionally reformatted coronal and sagittal CT images can be helpful in better definition the extension of ureteral.[11] Additionally, a late phase CT image with contrast, achieved 5-20 minutes after the injection of contrast media is the optimal technique for the demonstration of ureteral urine leaks. It wasn't possible for us to make the correct diagnosis in the first examination in our patient, probably due to our preconception of vascular complication. With the relief provided by serous nature of the collection, seroma misdiagnosis was readily available to hold on, which led us to omit late phase imaging. The recurrence of collection shortly after the drainage and the complaint of the patient telling lesser urine output than usual led us to the suspicion of urinoma formation, and the diagnosis was confirmed by late phase imaging with contrast in the second MSCT examination.

Ureteral stent placement was the first treatment option to be evaluated, but it wasn't possible. Near complete tear made the desperate retrograde stent placement trial to be a vain effort. Surgery had to be performed and uretero-ureterostomy was made.

As a conclusion; urinomas can be seen after surgical procedures and can present as massive fluid collections in abdomen. In such situations, radiological techniques, particularly CT carries a great importance in the definition of etiology and clinical procedure for the treatment of the complication. Especially, late phase CT imaging with contrast should be remembered first in cases with urinoma suspicion.

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