Ureter-iliac artery graft-cutaneous fistula: A rare presentation

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INTRODUCTION

Ureter-iliac artery fistula (UAF) is a rare complication after iliac artery procedures. Its presentation as cutaneous fistula is not known. The most common causes of fistula are an infection, persistent irritation by a foreign body such as a stent, arterial grafting vascular surgery, and irradiation. The presentation is usually as gross hematuria, and prompt diagnosis is important for appropriate treatment. It may manifest as cutaneous fistula if the persistent ureteric obstruction is present. This complication has not been reported in literature before.

CASE REPORT

A 55-year-old male patient underwent right femoropopliteal bypass in 2009 for intermittent claudication in the right lower limb due to arterial insufficiency in superficial femoral vessels. He was reexplored for stenosis of graft with a recurrence of symptoms. The patient underwent right iliac artery – right popliteal artery bypass using polytetrafluoroethylene (PTFE) graft in 2012. He presented 2 years later with sudden onset gross hematuria with sepsis. He was managed initially with insertion of three-way Foley catheter and irrigation. After hemodynamic stabilization, the patient underwent imaging in the form of computed tomography (CT) angiography was suggestive of fistula between ureter and iliac artery which was treated with arterial covered stent graft. The patient presented 2 weeks later with watery discharge from the previous scar. CT suggested ureter-cutaneous fistula. JJ stenting of ureter was done. The patient was discharged and on follow-up CT scan, there was no evidence of fistula and patient was completely asymptomatic. Ureter-iliac artery graft fistula with cutaneous involvement has not been reported in literature before.

Key Words: Iliac artery graft complications, ureter-iliac artery graft fistula, uretero-cutaneous fistula

Abstract

A 55-year-old male with a history of iliac artery – popliteal artery polytetrafluoroethylene graft bypass presented 2 years later with sudden onset gross hematuria with sepsis. Computed tomography (CT) angiography was suggestive of fistula between ureter and iliac artery which was treated with arterial covered stent graft. The patient presented 2 weeks later with watery discharge from the previous scar. CT suggested ureter-cutaneous fistula. JJ stenting of ureter was done. The patient was discharged and on follow-up CT scan, there was no evidence of fistula and patient was completely asymptomatic. Ureter-iliac artery graft fistula with cutaneous involvement has not been reported in literature before.

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is still uncertain, it has been postulated that it is a result of previous radiation therapy and pelvic or vascular surgical procedures, resulting in loss of the integrity of vasa vasorum. This causes a weakening of the adventitia and media of the large arteries and increasing their susceptibility to rupture and necrosis. The ureter can become fixed and obstructed by the surrounding inflammatory process leading to the fibrosed, less compliant ureter with eventual necrosis and formation of a fistula. Its presentation as cutaneous fistula is very uncommon and this may be a result of persistent infection in vicinity of artery as well as persistent obstruction.

Clinical awareness of the possibility of this condition is the most important of all diagnostic steps. Patients who underwent an exploratory laparotomy without any adequate preoperative diagnosis were reported to have a mortality rate of 64% and a retreatment rate of 25%. Whereas, a mortality rate of 0% was described in patients in whom the diagnosis was considered before an elective operation was performed. Some authors have supported the diagnostic role of magnetic resonance angiography and CT scan for diagnosis while most go in favor of retrograde ureteropyelography. Ureteroscopy under high-pressure gradient has also been reported to confirm the site of hematuria, with a diagnostic accuracy of 64%.

DISCUSSION

UAF is a rare but potentially life-threatening condition. The usual presenting symptom varies from intractable microscopic hematuria to gross hematuria occurring intermittently for a number of days. A variety of medical conditions and activities can predispose to the formation of UAF which include infection, vascular factors such as degenerative vascular diseases and previous vascular surgery. Other nonvascular factors include pelvic radiation, pelvic surgery, previous urinary diversion. Although the exact mechanism of the development of UAF...
surgery. Open surgery is done in cases who do not resolve with endovascular management this involves ligation of the involved artery, with or without bypass revascularization, as well as direct suturing with a patch graft in combination with urinary diversion, nephrostomy, or nephrectomy. At least two cases in the literature were treated by autotransplantation of the kidney which helped to make a new anastomosis of the ureter possible since a large part of the ureter had sustained damage as a result of the fistula. Other options include iliac artery embolization with bypass and transrenal ureteral occlusion with Gianturco coils. Uretero-cutaneous fistula should be managed by adequate drainage and bypassing the fistula site by placing JJ stent across fistula site. In cases refractory to endovascular management, open surgical approach remains gold standard. Uretero-cutaneous fistulas developing after treatment of UAF have not been reported in literature. This complication may occur if there is distal obstruction which may result in fistula with subsequent narrowing. This complication should be treated properly. Cases which are refractory to stenting should undergo an open surgical correction. Open surgical intervention can be done with excision of involved segment and ureteric reconstruction either with end to end anastomosis or with flaps.

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**Conflicts of interest**

There are no conflicts of interest.

**REFERENCES**

1. Batter SJ, McGovern FJ, Cambria RP. Ureteroarterial fistula: Case report and review of the literature. Urology 1996;48:481-9.
2. Quillin SP, Darcy MD, Picus D. Angiographic evaluation and therapy of ureteroarterial fistulas. AJR Am J Roentgenol 1994;162:873-8.
3. Bergqvist D, Pärsson H, Sherif A. Arterio-ureteral fistula – A systematic review. Eur J Vasc Endovasc Surg 2001;22:191-6.
4. Bullock A, Andriole GL, Neuman N, Sicard G. Renal autotransplantation in the management of a ureteroarterial fistula: A case report and review of the literature. J Vasc Surg 1992;15:436-41.
5. Inoue T, Hioki T, Arai Y, Inaba Y, Sugimura Y. Ureteroarterial fistula controlled by intraluminal ureteral occlusion. Int J Urol 2002;9:120-1.