İatrojenik Üreterovajinal Fistül: Olgu Sunumu

The Iatrogenic Ureterovaginal Fistula: A Case Report

Olgu Sunumu

Başvuru: 17.06.2015
Kabul: 28.07.2015
Yayın: 14.08.2015

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Özet


Anahtar kelimeler: Histerektomi, Fistül, Üreteroneosistostomi

Abstract

Introduction: Ureterovaginal fistulas (UVF) may occur following pelvic surgery, particularly gynecological procedures. Patients typically present with global and persistent urine leakage through the vagina, this causes patient discomfort and distress. Presentation of Case: A 38 year-old women underwent total abdominal hysterectomy and left salpingooopherectomy for the treatment of myoma uteri and left ovarian cyst. Two weeks postoperatively, she presented with urinary incontinance and vaginal drainage. A right UVF was diagnosed with retrograd pyelogram and Computed tomography(CT) urogram. Vesicovaginal fistula was ruled out with cystoscopy and cystogram. Patient was successfully treated with ureteroneocystostomy (UNC). Discussion: UVF should be considered in the differential diagnosis of new post-operative urinary incontinence in order to avoid diagnostic delays. Intravenous pyelography and/or a CT urogram can be used for diagnosis. Cystoscopy and retrograde pyelograms are essential to rule out the associated vesicovaginal fistula and to confirm the diagnosis. The aim of the management options are preventing renal loss and treating urinary incontinence. Conclusion: Ureteric retrograd stent insertion is a primary management for the ureterovaginal fistula. In the case of failure, an early surgical repair is the best way for the treatment.

Keywords: Hysterectomy, Fistula, Ureteroneocystostomy

Introduction

The ureter is susceptible to injury during pelvic surgery because it passes through the retroperitoneum. Approximately 80 to 90 % of injuries occur in the distal portion where it passes beneath the uterine vessels [1]. The incidence of ureteral injury in gynecological surgery is 0.04 % for abdominal hysterectomy, 0.02 % for vaginal hysterectomy, and 0.8–4.3 % for laparoscopic hysterectomy [2]. Ureterovaginal fistulas (UVF) are...
uncommon, its estimated incidence is 0.16%, and occur after ureteral injury during abdominal hysterectomies, vaginal prolapse repairs, colonic and pelvic vascular surgeries [3]. Surgery for benign gynecological diseases accounts for the majority of ureterovaginal fistulae and left ureter is more vulnerable to injury and fistulization [4]. Ureteral obstruction or urinary leakage due to fistulization, may have serious implications because of compromised renal function and poor quality of life. So, the aim of the management options are preventing renal loss and treating urinary incontinence. We herein presented an UVF which had been occured after abdominal hysterectomy and successfully treated with UNC. We aimed to mention management options of UVF.

Case Report

A 38 year old women was referred to our university hospital with urinary incontinence and clear vaginal drainage after total abdominal hysterectomy and left salpingooopherectomy because of myoma uteri and left ovarian cyst. The operation was uncomplicated and patient’s complaints have been started two weeks after the operation. Vaginal examination revealed active urine leak from a 2 to 3 mm opening at the right vaginal fornix. Transvaginal ultrasonography revealed fluid accumulation in the right adnexal area and normal right ovary. Cystoscopy showed no bladder abnormalities. Absence of the vesicovaginal fistula was confirmed by cystogram (Figure 1).

Computed tomography CT urogram demonstrated right hydronephrosis and extravasation of contrast from the right distal ureter. During ureterorenoscopy, it was seen that ureter was occlused after the 2 cm and DJ stent can not be placed. Retrograd pyelogram was also showed right ureteral stenosis (Figure 2).

Laparotomy was revealed and it was seen that right ureter was injured at the level of right uterine artery and fistula tract was distal proportion of right ureter. Ureter dissection was done carefully and patient underwent
successful right ureteroneocystostomy without boary flap (Figure 3). Follow-up, intravenous pyelogram 2 months after the surgery confirmed a normal right ureter with the absence of hydronephrosis (Figure 4).

Discussion

UVF is a serious sequel to unrecognized ureteral injury and is usually iatrogenic [5]. The close proximity of the ureter to the female reproductive organs renders it particularly vulnerable to injury during gynecologic surgeries. Morbidity associated with UVF may be serious, resulting in potential loss of ipsilateral renal function and deterioration of the patient’s quality of life. Forms of ureteral injury are laceration, transection, avulsion or ischemia from periureteral dissection. UVF may develop in unrecognized ureteral injuries and it takes 7-14 days for a symptomatic fistula to develop. Patients usually present with continuous vaginal leak of urine, ipsilateral flank pain and hydronephrosis like in our case. Diagnosis is made clinically after vaginal exam and confirmed with a suitable imaging modality, such as intravenous pyelogram, retrograde pyelogram, computed tomography CT urogram or magnetic resonance (MR) urogram. CT and MR urogram provide anatomic details for surgical planning [3]. In the present case we used retrograde pyelogram and CT urogram for diagnosis and surgery planning. It is important to remember that ureterovaginal fistula may be associated with vesicovaginal fistula in 10% of cases and that both types of injury should be evaluated [6]. Because of this, in the present case, cystogram was performed and vesicovaginal fistula was ruled out.
There have been different management options regarding treatment of UVF. Improvements in endoscopic techniques provided stenting as the first-line treatment for UVF fistula. Ureteroscopic DJ stenting has also been a minimally invasive treatment for UVF. When the diagnosis first made, initial attempts at retrograde DJ stenting should be made, and then antegrade stenting may be a choice as the second-line treatment with percutaneous nephrostomy while awaiting surgery if retrograd stenting is not feasible. Both methods of drainage should not exceed 3 months because there is a possibility of infection and secondary stone formation. Ureteroscopic DJ stenting has the less risk of secondary infection which is common with percutaneous nephrostomy. Percutaneous nephrostomy if used as the only approach to management, the risk of fistula persistence and stricture formation is significant. In the case series of Schmeller et al [7], whom percutaneous nephrostomy was the primary modality of the treatment, a fistula persistence and ureteral stricture rates have been reported 55% and 18%, respectively. So, according to our opinion; because of high fistula persistence and ureteral stricture rate of percutaneous nephrostomy; immediate surgical intervention should be performed if retrograd stenting is not feasible.

The success rates for management of iatrogenic UVF via retrograde placements of ureteral stents vary from 15% to 84% [5]. Rajamaheswari et al [4] reported in their case series that ureteroscopic stenting was achieved in 13 of 17 patients. They concluded that success rates of the DJ stenting has been effected by some factors: interval between index surgery and onset of the leakage, the interval between onset of leakage and intervention, type of the utereral damage and level of the utereral damage. Type and severity of intraoperative utereral trauma determines the severity of the utereral obstruction. Stenting could not be performed in complete utereral occlusion like in our case. Success rates of ureteral DJ stenting was higher when level of the utereral damage was within 2 cm from the utereral orifice and earlier intervention has also high success rates. Al-Otaibi [8] reported that the success rate of DJ stenting for 6-8 weeks is 64% in their series. Although fistula resolution rates are varying, the risk of subsequent ureteral stricture is between 6% and 38% [2].

Surgical repair is generally accepted as an effective strategy for management of UVF with a reported success rate of about 90% in multiple studies and is considered the gold standard [9]. When the stent failure or ureteral stricture disease occur, surgical intervention becomes necessary. UNC is a traditional method for the surgical treatment. Surgery targets the healthy ends of the utereral proximal and distal to the injured segment. Both ends are either anastomosed together, or the proximal healthy utereral end is anastomosed to bladder like in our case. UNC may be performed with open, laparoscopic or robotic approach with or without Boari flap or a psoas hitch [3]. Surgical repair is the classic treatment for a UVF and there is a trend to repair the UVF at least 3 months after the injury, when tissue healing is complete. Demirci et al. [10] concluded that delayed fistula repair after a minimum of 3 months, via the abdominal route resulted in a good outcome. Lee et al. [11] reported 9 cases of UVF after gynecologic surgery with delayed management, 4 of them underwent surgical repair via UNC. The success rate of ureteroureterostomy in delayed group was only 50%. Kumar et al. [12] analyzed data from 84 patients with UVF occurred after gynecologic surgeries, and all patients except 1 received conventional delayed surgical repair. Although there was no surgical failure, postoperative complications such as wound infections and hemorrhuria were encountered. There are also some controversies about timing. Waiting for at least for 3 months before surgical repair, patients encounter the risk of losing ipsilateral renal function due to ureteral stricture. Deterioration of the patient’s quality of life because of persistent urinary leakage is another problem. Shelbaia et al. [13] reported the results of 20 early repair of genitourinary fistulas using a retropubic, extraperitoneal, transvesical approach and 6 of them was ureterovaginal fistula. They concluded that immediate repair of the genitourinary tract fistulas decreased the incidence of scar formation, tissue manipulation, and deep venous thrombosis. According to results of their study they have shown that early repair of genitourinary tract fistulas results in a high quality of life, few postoperative complications, and a high success rate and preservation of renal function. Yu et al. [5] reported the results of the 63 patients with UVF. They performed surgical treatment 2-3 weeks after fistula formation and before fibrosis and tissue scarring occurred. According to their results early surgical repair of UVF was safe and effective with lower complications and preserved ipsilateral renal function. In the lights of this background, in the present case we planned the immediate surgery after the patient referred to us.
In recent years, there is a trend for using laparoscopic or robotic approaches as a treatment of UVF. Garza et al. [2] have reported that laparoscopic approach is minimally invasive surgery for treatment of UVF. Laungani et al. [14] recommended an early repair of fistula with robotic assistance to reduce the period of morbidity. Boateng et al. [3] reported a new technique for treating UVF via vaginal approach. They reported that this procedure may be a choice for the cases which have small fistula size, ureteral patency, fistula accessibility through vaginal approach.

In conclusion, the patients with symptoms of urinary incontinance or vaginal drainage after gynecologic surgery should be evaluated in terms of fistula formation. Intravenous pyelography and/or a CT urogram can be used for diagnosis. Cystoscopy and retrograde pyelograms are essential to rule out the associated vesicovaginal fistula and to confirm the diagnosis. Ureteric retrograd stent insertion is a primary management for the ureterovaginal fistula. In the case of failure, an early surgical repair is the best way for the treatment.

References