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SURGICAL MANAGEMENT OF IATROGENIC INJURY OF BOTH URETERS FOLLOWING HYSTERECTOMY - CASE REPORT

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Abstract

Intraoperative injury of the ureters and the bladder during hysterectomy is not uncommon. Lesion of both ureters is much rarer condition and it occurs in 5% to 10% of injury cases. Acute renal failure develops in case of ligation of both ureters.

Diagnosis of this condition, intraoperatively or in the first seven postoperative days at the latest, allows complete recovery of the renal function. A 44-year-old women was admitted at the Department of Nephrology at Acibadem Sistina Hospital in Skopje due to anuria, lower abdominal pain and nausea.

On admission the patient had increased creatinine levels and sonography finding of grade 3 hydronephrosis bilaterally. Two days earlier the patient underwent hysterectomy and adnexectomy by Pfannensteil due to myoma. MRI of lesser pelvis without contrast and retrograde urethrocystography were performed for diagnostic purposes.

A bilateral prevesical lesion of the ureters was found. Upon the admission, the patient underwent two consecutive haemodialysis sessions. On the fourth day after the first surgery (hysterectomy) the patient was transferred to the Department of Urology where a surgery: bilateral ureterocystoneostomy (sec. Litch-Gregoire) was performed the same day.

Following surgery the patient went in to polyuria with rapid normalization of the renal function. On the sixth postoperative day, the patient was discharged from the hospital in good general condition. In case of anuria following hysterectomy, a mechanical lesion of the ureters should be suspected.

Early diagnosis allows for complete rehabilitation without consequences to the renal function.

Keywords: acute renal failure, intraoperative ureteral lesion, hysterectomy, haemodialysis.

Introduction

Hysterectomy is the most common gynecological intervention. An intraoperative ureteral injury during hysterectomy (classic, vaginal or laparoscopic) is not uncommon and it occurs with an incidence of 0.2% to 6% [1].

Lesion of both ureters is much rarer and it occurs in 5% to 10% of the injury cases [2]. There are several types of ureteral injuries: mechanical including laceration, ligation, thermal, devascularisation, or denervation.

There can be many complications resulting from an unrecognized and untreated ureteral injury such as: urinoma, abscess, urethral stricture, loss of renal function to the affected kidney, and fatal outcome in some cases [3].

Acute renal failure (ARF) develops in case of ligation of both ureters as a result of obstructive nephropathy. This paper presents our own experience of a rare gynecological surgery (hysteroadnexectomy) complication including bilateral mechanical injury of the ureters.

Case report

A 44-year-old women was admitted at the Department of Nephrology at Acibadem Sistina Hospital in Skopje due to anuria, lower abdominal pain and nausea.

On admission the patient had increased creatinine levels (creatinine 915) and sonography finding of grade 3 hydronephrosis bilaterally. Two days before the admission the patient underwent hysterectomy and adnexectomy by Pfannensteil incision due to myoma.

A day after the surgery, the patient developed anuria and therefore she was referred to PHI University Clinic of Nephrology in Skopje, but upon her personal choice, she went to the Private Healthcare Institution - Acibadem Sistina Hospital in Skopje.

The anamnesis gave information on laparoscopic removal of the right ovary in 2012 due to an ovarian cyst. Examinations such as Magnetic Resonance Imaging (MRI) of lesser pelvis without contrast and Retrograde Ureterocystography (RUCG) with exploratory cystoscopy were performed immediately after the admission for diagnostic purposes.

MRI confirmed a prevesical ligation of the ureters bilaterally with grade 2 to grade 3 hydroureteronephrosis bilaterally (Fig. 1). The RUCG confirmed bilateral ureteral ligation without leakage (Fig. 2 and Fig.3).

Upon the admission, the patient underwent two consecutive haemodialysis sessions, resulting in water and electrolyte balance and a significant reduction of the creatinine levels.

On the fourth day after the first surgery (hysterectomy and adnexectomy to the right) the patient was transferred to the Department of Urology where a urology surgery: bilateral ureterocystoneostomy (sec. Litch-Gregoire) was performed the same day. JJ stents were inserted in both ureters intraoperatively. Urine was obtained from both ureters during the surgery.

Following surgery the patient went in to polyuria with rapid normalization of the renal function (creatinine 72).

On the sixth postoperative day, the patient was discharged from the hospital in good general condition.

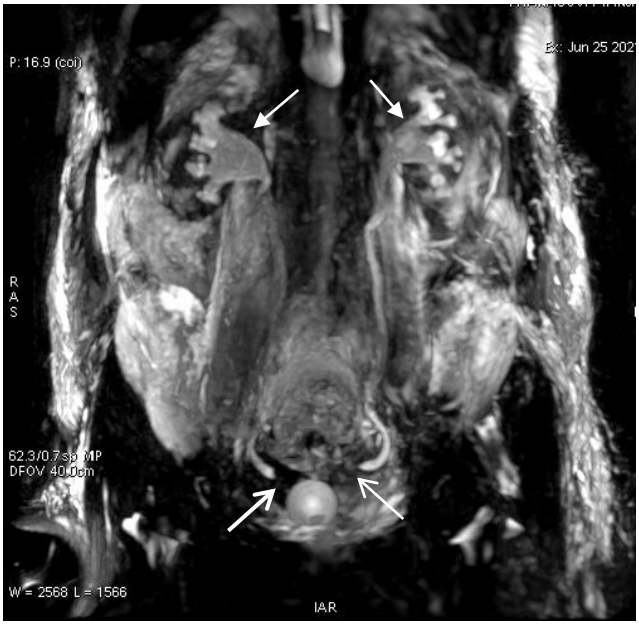

Figure 1. MRI: Both ureters have funnel-shaped narrowing in the prevesical segment (down arrows). Dilatation of the ureters with grade 2 to grade 3 hydronephrosis bilaterally (upper arrows).

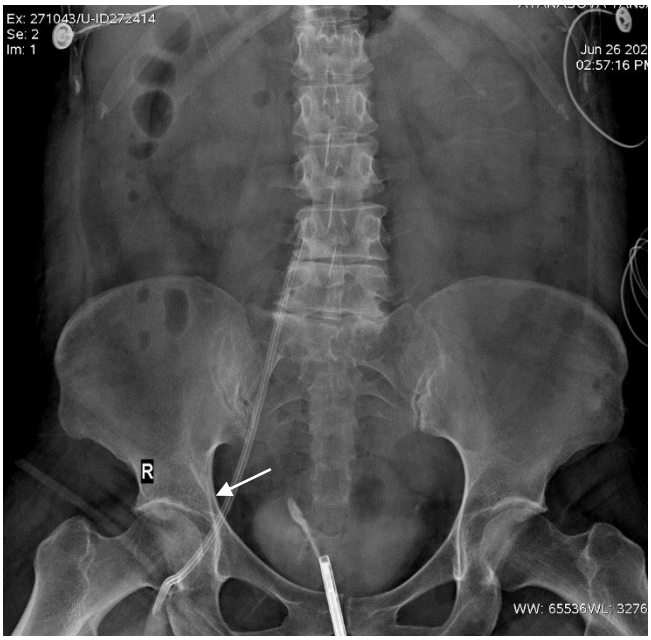

Figure 2. RUCG: Following injection of a contrast agent, the right ureter is not presented (arrow).

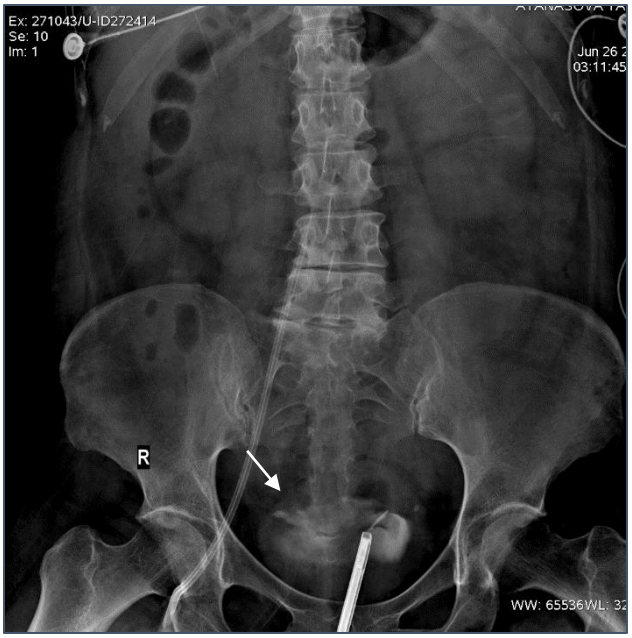

Figure 3. RUCG: Following injection of a contrast agent, the left ureter is not presented (arrow*).*

Discussion

Hysterectomy is the most common gynecological intervention. Intraoperative injury of the ureters during hysterectomy (classic, vaginal or laparoscopic) is not uncommon and it occurs with an incidence of 0.2% to 6% [1].

Data from a large observational study involving 2341 patients indicate 13% prevalence of ARF in gynecological surgeries, while 1.3% of ARF patients out of these had evident mechanical urological injuries [4].

Incidence of mechanical urological injuries increases significantly during gynecological surgeries with the occurrence of excessive bleeding and failure to stop it with conventional measures [5]. Other predisposing factors associated with an increased risk of ureteral injury are: abnormal pelvic anatomy, endometriosis, adhesions from a previous surgery, large ovarian mass, obesity, etc. [6].

In our case the predisposing factors for ureteral injury were previous laparoscopic removal of the right ovary nine years ago and large myomatous uterus.

For easier recognition of possible ureteral injury, some authors recommend a Furosemide ampoule to be administered at the end of the surgery in order to observe the surgical field for the presence of urine leakage [7].

One of the possible preventive steps to avoid intraoperative ureteral lesion is the preoperative insertion of JJ stents in the ureters.

Very rarely, as stated in the paper of Fujimora et al., preoperatively inserted ureteral open-end catheters may become occluded and cause ARF without ureteral lesion [8]. According to this, insertion of JJ stents in gynecological interventions, as a preventive approach to avoid ureteral lesion, should be priority.

Conclusion

In conclusion, we would like to emphasize that in case of oligoanuria following a gynecological surgery, possibility of a mechanical ureteral lesion should be considered.

Early diagnosis and treatment of this condition allow for complete recovery of the renal function. A multidisciplinary approach in diagnosis and therapy involving radiologist, gynecologist, nephrologist and urologist are important determinants of the treatment success.

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