



## Research Letter

## Intraoperative finding of Falope ring over ureter as a cause of nonfunctioning kidney during laparoscopic simple nephrectomy

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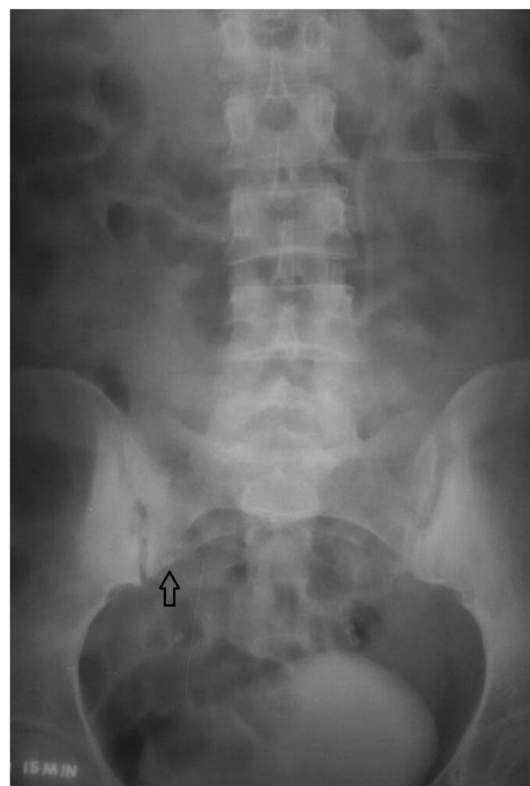
Dear Editor,

Laparoscopic tubal ligation is one of the most common laparoscopic procedures performed worldwide. The incidence of associated ureteric injury is low and usually due to thermal injury. An interesting case of nonfunctioning kidney secondary to ureteral ligation by Falope ring is presented.

A 46-year-old postmenopausal woman with no comorbidity presented with dull aching right flank pain for 4 months. She had history of laparoscopic tubal ligation 15 years previously. On ultrasonography, there was a severely hydronephrotic right kidney with a normal left kidney. Serum creatinine was 0.8 mg/dL with normal excreting left kidney on intravenous urogram (Figure 1). On ethyl cysteine scan, the right kidney was not visualized whereas the left kidney was normal. The patient underwent laparoscopic transperitoneal simple nephrectomy. Intraoperatively, there was a grossly dilated right kidney and ureter up to the right sacroiliac joint and a tubal ligation clip was identified over the right ureter (Figure 2). The ureter was removed up to the sacroiliac joint. The postoperative period was uneventful. Histopathology report revealed chronic pyelonephritis. At 3 months follow-up, the patient was doing well.

Ever since laparoscopic surgery began in the 1960s, ureteric injuries have been associated with them. Laparoscopic hysterectomy is the most common laparoscopic procedure leading to ureteric injury with a reported rate from 0.5% to 14% [1]. Patients with delayed presentation have a variety of signs and symptoms

[2]: anuria (14%, most with bilateral injury), urogenital fistula (11%), persistent pain or fever (8%), urinary leakage from the wound (8%), hydronephrosis (3%), and hematuria (3%). Many of them are asymptomatic or mildly symptomatic as in our case. The diagnosis is most often achieved by computed tomography urography, intravenous urogram, or retrograde ureterography. A renal scan



**Figure 1.** Intravenous urogram showing normal excreting left kidney and nonexcreting right kidney. The arrow points to the Falope ring identified intraoperatively over the ureter.

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**Figure 2.** Nephrectomy specimen with Falope ring over the ureter.

establishes the baseline renal function. If the kidney shows some residual function, a percutaneous nephrostomy should be placed. Placement of a double J stent at this time is usually not possible due to the significant degree of narrowing of the ureter. Depending

upon the function on subsequent renal scan, definitive repair or nephrectomy is planned.

The first case of ureteric injury during laparoscopic tubal ligation was reported by Engel et al [3] in 1971. The patient underwent re-exploration, and ureteroneocystostomy with Boari flap repair was performed. Most of the cases reported afterwards were associated with thermal injury from electrocautery [4]. Forster et al [5] reported a case of ureteric injury with filshie clip in a 37-year-old female with history of mild hypertension. The patient presented in early postoperative period with abdominal pain and was managed conservatively. After 3 months, she presented with worsening hypertension and was found to have right sided hydronephrosis and a poorly functioning kidney. She underwent ureteric reimplantation. Our case differs from the above presentation in that the patient was a nonhypertensive and never had postoperative pain or discomfort for 15 years after tubal ligation.

Ureteric injury during laparoscopic tubal ligation usually occurs at the pelvic brim. Here, the ureter comes in close proximity with the infundibulopelvic ligament, lying posterior and medial to it. Inflammation and adhesion make identification of anatomical planes difficult and therefore requires careful identification and dissection.

#### Conflicts of interest

The authors have no conflicts of interest relevant to this article.

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