CASE REPORT

Ureteric obstruction requiring nephrectomy after uterine fibroid embolization

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To our knowledge, there have been no reported cases of ureteric obstruction resulting in a non-functioning hydronephrotic kidney after uterine fibroid embolization. We report a case of a patient who required surgical intervention for management of symptoms.

Key Words: ureteric obstruction, uterine fibroid, embolization, nephrectomy

Case report

A 40-year old woman underwent embolization for a large uterine fibroid in May 2000. There were no identified complications during or immediately after the procedure. She had a normal appearing kidney on ultrasound prior to the embolization. However, she began to develop intermittent right flank and lower quadrant pain in January 2003. She then underwent ultrasonography and nuclear imaging which revealed a non-functioning, hydronephrotic right kidney. Cystoscopy and right retrograde pyelogram showed complete obstruction of her right ureter 6 cm above the ureterovesical junction.

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The patient's medications included Synthroid, Vitamin B-12, and Paxil. She had no known allergies.

The past history was significant for sleep apnea and tonsillectomy. There was no history of hypertension, urinary tract infections, urolithiasis or hematuria. The patient smoked one pack of cigarettes a week and consumed alcohol occasionally.

Physical exam revealed a ballotable right kidney. Right CVA tenderness could be elicited. Blood pressure was within normal limits. Creatinine was also within normal limits. Urine analysis, culture and cytology were unremarkable. Further imaging was then performed. CT scan Figure 1 showed non-function of the right kidney with severe right hydroureteronephrosis distally to an area of opacification consistent with her previous embolization procedure. Repeat ultrasonography confirmed chronic severe hydronephrosis in the right kidney, no identifiable right renal cortex with the right ureter dilated and distally collapsed. There was an abrupt transition consistent with a benign stricture.

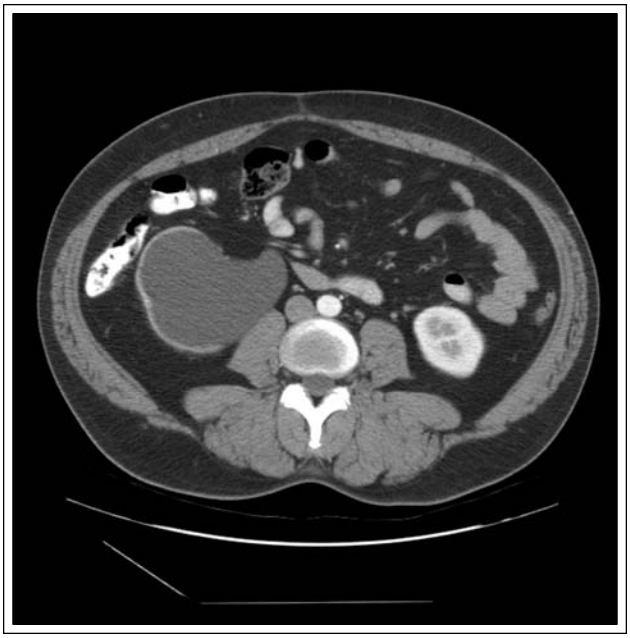

Figure 1. CT scan reveals right hydroureteronephrosis and non-function.

The patient felt that the frequency and intensity of the pain were interfering with her quality of life especially with regard to her job performance as a child and youth care worker. Various treatment options were discussed and she elected to undergo a right laparoscopic nephrectomy. The laparoscopic nephrectomy was performed on August 5th, 2003 without complication Figure 2. The patient's pain completely abated after the operation. The final pathology revealed a hydronephrotic right kidney with chronic obstructive uropathy.

Discussion

Chronic ureteral obstruction results in gradual loss of ipsilateral renal function. Total obstruction for more than 6 weeks may result in complete and irreversible loss of all function for that kidney.[1] Ureteric obstruction has been classified as either intrinsic or extrinsic. Intrinsic causes can include ureteral calculi, blood clots, sloughed papillae, and strictures. Some extrinsic causes include retroperitoneal fibrosis, endometriosis, abscesses, diverticulitis, radiation, prior surgery, and trauma.[2-4]

A review of the literature reveals no reported cases of ureteric obstruction after uterine fibroid embolization.[5,6] We postulate that there may be two mechanisms to explain the findings. The uterine artery supplies both the lower ureter and segment of the uterus. Embolization of the artery may have

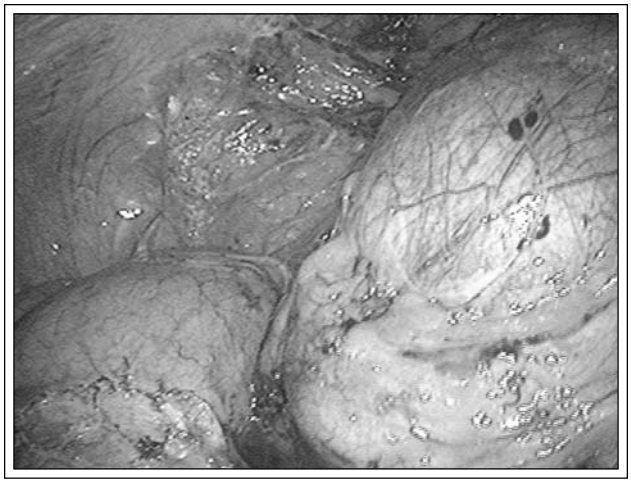

Figure 2. Laparoscopic view.

resulted in segmental infarction of the ureter. Additionally embolization and subsequent fibroid infarction may have created periureteral or ureteral inflammation and fibrosis. It has been reported that the uterine fibroid undergoes necrosis with an inflammatory reaction .[7] This resulted in ureteric obstruction that led to hydronephrosis and renal deterioration which became apparent upon evaluation of the patient's pain. The perifibroid inflammation may also have contributed.

We recommend that physicians be aware of the possible complication of ureteric obstruction after uterine fibroid embolization. Renal imaging may be indicated in the presence of flank pain after this procedure. □

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