

Approach to Urinary tract endometriosis: a single-center experience and meta-analysis of the literature.

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Purpose: Management of urinary tract deep infiltrating endometriosis (DIE) still remains a dilemma to the endometriosis surgeons. The current study aimed to report single-center outcomes of laparoscopic management of patients with urinary tract endometriosis. It also sought to perform a meta-analysis in order to select the best medical approach with these patients.

Design: cross-sectional study was conducted during a six-year period (2015-2021) in the referral endometriosis center affiliated to Shiraz University of Medical Sciences (SUMS).

For the meta-analysis, among a total of 9567 reports identified through the online database search, 10 articles were found to be eligible for our meta-analyses. These studies included 505 patients who underwent laparoscopic surgery for urinary tract endometriosis.

Patient(s): Women with laparoscopic diagnosis and histologic confirmation of urinary bladder or ureteral endometriosis who agreed to undergo long-term follow-up after laparoscopic management.

Intervention(s): Laparoscopic partial cystectomy for bladder endometriosis. Uretric endometriosis managed by: ureterolysis only; segmental ureterectomy and terminoterminal anastomosis; or segmental ureterectomy and ureterocystoneostomy and Boari flap.

Main Outcome Measure(s): preoperative findings and imaging details, operative details (type and site of UTE, type of intervention, perioperative complications), and long-term follow-up (persistence/recurrence of preoperative urinary symptoms, and anatomic relapse of the disease).

In our metaanalysis, all endometriosis-related pain symptoms before and after surgery, especially urinary symptoms as well as all outcomes and complications of surgery were evaluated, analyzed and reported.

Result(s): In this study (n=353), 94.6% of the patients underwent ureterolysis, 2.1% ureteroureterostomy surgery, 2.4% Ureterectomy and ureteroneocystostomy surgery, and 7.6% underwent bladder endometriosis surgery. Hydronephrosis was seen in only 11.3% of the patients. 1.2% (n=5) of them had intrinsic ureteral lesions and three cases of silent kidney was reported. Mean operating time was 5.25 ± 1.83 hr. Mean hospitalization was 5.86 ± 2.58 days. The most common site of concomitant involvement with UE lesions was uterosacral ligament (92.9%) and rectosigmoid (70.53%) deep endometriosis. The rate of JJ insertion was about 46.7%. Type II and III of Cliven_ dindo complications was seen in 5.66% and 1.13% of patients respectively. 92.4% of the patients had a history of previous endometriosis surgery. A history of previous surgery due to endometriosis was associated with increased ureteral trauma during ureterolysis ($P=0.019$). 13.7-fold decrease in dysmenorrhea and a 5.3-fold in dyspareunia and just 3.3-fold decrease in the urinary symptoms after the operation was reported. During a follow-up period (up to 6 years), no evidence of bladder or ureteral re-involvement or recurrence was seen during follow up period.

In our meta-analysis all endometriosis related pain such as: dysuria, dysmenorrhea, dyspareunia and dyschezia significantly decreased after operation. ($P=0.001$; $I^2=98.7\%$, $P<0.001$; $I^2=88.1\%$, $P<0.001$; $I^2=91.3\%$, and $P<0.001$; $I^2=98.3\%$). The rate of recurrence ureteral endometriosis, stenosis/stricture, bladder atonia, urinary tract infection, hematuria and fistula formation after surgery were: 2.0% [$I^2: 50.42\%$], 15.0% [$I^2: 0.00\%$], 14.0% [$I^2: 8.76\%$], 6.0% [$I^2: 0.00\%$], 7.0% [$I^2: 79.28\%$], and 2.0% [$I^2: 0.0\%$], respectively. In our meta-analysis, uterosacral and rectal involvement was shown to be the most common site of involvement with UE lesions

Conclusion: Thus, the laparoscopic resection of the UE could be suggested as a feasible and safe method associated with a low complication rate and favorable functional outcomes, when done in the right group and by a skilled surgeon.