Extra-peritoneal vs. Trans-Peritoneal Radical Cystectomy pros and Cons

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One of the most common cancers of the urinary tract is bladder tumors. Bladder cancers are divided into two groups: non-muscle-invasive bladder cancer (NMIBC) and muscle-invasive bladder cancer.[1]

Trans-Peritoneal Radical Cystectomy (RC) with pelvic lymphadenectomy is the standard technique in muscle invasive and high risk non-muscle invasive bladder cancer[2]. and Urologist around the world are more familiar with trans-peritoneal technique.

In some articles extra-peritoneal Radical Cystectomy (RC) implied as an decreased postoperative complications techniques. In this letter we want to compare these two techniques and find out the pros and cons of these techniques.

In trans-peritoneal RC Amongst which, the most frequent complication is gastrointestinal problems . A possible reason for this high rate is the contact of intestinal serosa with the de-peritonealized pelvic wall. This induces an inflammatory reaction that alongside postoperative adhesion bands, reduces bowel peristalsis, causes ileus, obstruction, distention, and increases pain.[2] The important features of extra-peritoneal RC include a small infraumbilical incision, completely extraperitoneal dissection to maintain the bowel loops away from the operating field, urethral dissection performed earlier in the operation rather than at the end to preserve the striated urethral sphincter with the neurovascular bundles, completely retrograde dissection of the rectovesical plane for increased safety and reperitonealization done at completion to isolate the urinary anastomoses from the bowel anastomosis.[3]

How ever serosanguinous fluid after extraperitoneal RC is a problem which happens, but in intra-peritoneal RC this fluid sealed off with peritoneum and helps to absorb the fluid. The other point is that in extra-peritoneal RC the pelvic cavity is empty and the pressure of closed peritoneum push the conduit down to the pubic bone and caused fibrosis which is the main cause of anastomosis failure . on the other hand in ureters anastomosis which is easier in extra-peritoneal RC because of length of ureters is more than in intra-peritoneal approach and do not need to cross the left ureters under the sigmoid meso which causes angulation of left ureter.

Based on our experience in shohada-e tajrish hospital (Tehran , Iran) in a female patient who underwent extra peritoneal RC using the ileal conduit method, this method led to the compression of the conduit by the pressure of the peritoneum to the bottom of the pelvis and finally caused the fistula between the end of the conduit and the vagina. In other patients who underwent extra peritoneal RC, continued leakage of serosanguinous fluid led to wound opening, and in two other patients, it led to prolonged sealing of the anastomosis of the ureters to the conduit.

Finally, it is suggested to limit the extra peritoneal RC for orthotopic urinary diversion.in this technique neo bladder prevent the movement of peritoneum to the bottom of the pelvis And it prevents the serosanguinous fluid led to wound opening and led to prolonged sealing of the anastomosis of the ureters.

REFERENCES

1. Allameh, F., Sangian, A., Razaghi, M. et al. Comparison of various types of lasers and transurethral resection in the treatment of bladder tumors: a systematic review and meta-analysis. Lasers Med Sci;2022; 37, 95–101.
2. Soleimani M, Moradkhani E, Masoumi N, Gholivandan J. Extra-Peritoneal versus Trans-Peritoneal Open Radical Cystectomy - Comparison of Two Techniques in Early Post-Operative Complications. Urol J. 2021 ;18:519-524.
3. Kulkarni JN, Gulla RI, Tongaonkar HB, Kashyapi BD, Rajyaguru KB. Radical cystoprostatectomy: an extraperitoneal retrograde approach. J Urol. 1999 ;161:545-8.

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