

## Original Article

# Our Experience of Laparoscopic Anterior Exenteration in Locally Advanced Cervical Carcinoma

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**ABSTRACT** **Study Objective:** To show the feasibility, technique, and results of laparoscopic anterior exenteration in selected patients. **Design:** A retrospective cohort study. **Setting:** Galaxy Care Laparoscopy Institute, Pune, India. **Patients:** Seventy-four of 85 patients who underwent laparoscopic anterior exenteration for stage IVA carcinoma of the cervix from January 2005 to January 2015 were analyzed; the median follow-up was 30 months. Contrast-enhanced computed tomographic imaging of the abdomen and pelvis was performed for all patients. **Interventions:** The same surgeon and team performed all the operations for uniformity in 10 operative steps. **Measurements and Main Results:** The mean operative time was 180 minutes, and the mean blood loss was 160 mL. The mean hospital stay was 6 days. The average number of lymph nodes removed was 21.4. Surgical margins were negative in all patients. Forty-two patients had positive lymph nodes. Chemoradiation was given to those with positive lymph nodes. Perioperative complications occurred in 15 (20.27%) patients including deep vein thrombosis, urinary tract infection, ureterosigmoid leak ( $n = 2/74$ ), and so on. Positron emission tomographic imaging and computed tomographic scanning were performed at 6 months after surgery and 6 months after adjuvant therapy in those with positive lymph nodes. There was no immediate postoperative mortality. The overall survival rate at 5 years was 25%. **Conclusion:** Laparoscopic anterior exenteration is feasible in cases of advanced carcinoma of the cervix. Results have shown that in selected patients this procedure is associated with good long-term survival. Journal of Minimally Invasive Gynecology (2016) 23, 396–403 © 2016 AAGL. All rights reserved.

**Keywords:** Advanced carcinoma cervix; Laparoscopic anterior exenteration; Palliation; Ureterosigmoidostomy

Pelvic exenteration is one of the most extensive surgeries performed for the treatment of advanced gynecologic malignancies. Invariably, this is done as a salvage procedure after chemotherapy and radiation. Hence, this is associated with considerable morbidity and mortality.

The archetype of this operation was developed in the 1940s, but this surgery was first reported by Alexander Brunschwig in 1948 for the treatment of persistent or recurrent gynecologic cancer. Brunschwig [1] described complete

resection of the rectosigmoid colon, genital tract, and bladder, including all supply and suspensory structures and regional lymph nodes of these organs and the urethra, anus, and (parts of) the vulva. Major drawbacks were attributable to the combined stoma clearing urine and feces together and included urinary tract infection, hyperchloremic acidosis, and difficult handling of the bag device [1]. Bricker [2] made a substantial improvement in exenterative pelvic surgery with the development of the ileal conduit to separate the urinary and fecal stoma.

Currently, anterior exenteration (AE) is 1 of the modalities for the treatment of locally advanced cancers of the cervix. AE includes removal of the bladder, lower ureters, perivesical stump, uterus, ovaries, and ilio-obturator and iliac lymph nodes. Urinary tract reconstruction is the main issue after AE.

The authors declare that they have no conflict of interest.

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The minimal invasive approach has significantly reduced the morbidity associated with this procedure. We share our experience of laparoscopic AE in locally advanced cervical carcinoma.

### Study Design/Materials and Methods

Eighty-five patients were posted for surgical exploration. Eleven of 85 patients were found to be inoperable during diagnostic laparoscopy because of the involvement of major vessels, the rectum, and the lateral pelvic wall. Retrospective analysis was performed for 74 patients who successfully underwent laparoscopic AE (Magrina type 1 supraleator) for stage IVA cancer of the cervix from January 2005 to January 2015 at Galaxy Care Laparoscopy Institute, Pune, India [3].

All medical records and details relevant to the study were retrieved. Along with the routine investigations, all patients underwent contrast-enhanced computed tomographic (CT) imaging of the abdomen and pelvis, cystoscopy, and proctoscopy. Examination under anesthesia was performed to assess the parametrial and rectal involvement. Cervical biopsy was performed in all patients for histologic confirmation of primary/persistent disease. The options of urinary diversion were discussed with patients and their relatives. A written informed consent for laparoscopy and urinary diversion was obtained. The need for conversion to open surgery was also discussed, and consent for the same was taken. The inclusion criteria were as follows: cervical cancer with bladder involvement, vault recurrence after prior treatment, and carcinoma of the cervix with vesicovaginal fistula. Exclusion criteria were extrapelvic spread, distant metastasis, involvement of the rectum, extension to the lateral pelvic wall, unilateral pedal edema, and a medically unfit patient.

Bowel preparation was performed 1 night before surgery. Combined epidural and general anesthesia was used in all patients. Epidural anesthesia was used for the advantage of intraoperative controlled hypotension and postoperative analgesia. The sympathetic blockade contracted the small bowel, which helped to keep it out of the operative field. Deep vein thrombosis (DVT) prophylaxis with DVT pumps and postoperative low-molecular-weight heparin were undertaken. Prophylactic antibiotics (third-generation cephalosporin with metronidazole) were given 1 night before surgery, intraoperatively, and for 2 days postoperatively.

Patients were placed in a modified Lloyd-Davis position, and an examination under general anesthesia (per rectal and per vaginal) was performed to exclude involvement of the rectum and pelvic side wall. This helped to differentiate between radiation fibrosis and infiltration by tumor. Pneumoperitoneum was created by inserting a Veress needle at Palmer point. Five ports were used: a 10-mm camera port just below the umbilicus, a 5-mm port at the border of the rectus muscle on the right, and a 10-mm working port at McBurney point on the right side; similar ports were placed on the left side as a mirror image.

The primary surgeon operated from the right side of the patient, and 2 assistant surgeons were on the left side of the patient. Uterine manipulation was performed using a myoma screw cranially from the left pararectal 5-mm port with precaution without disturbing the oncologic principles.

### Operative Steps

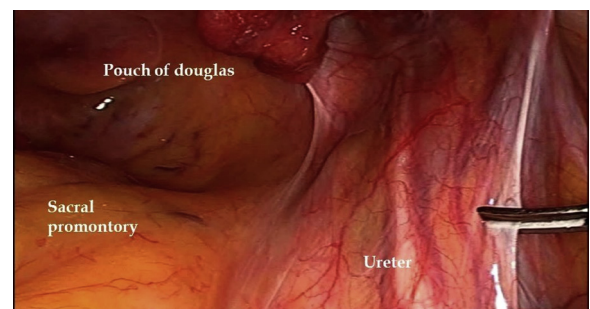
The same surgeon and team performed all the operations for uniformity in operative steps. The operative steps were as follows:

1. Peritoneal cut was made at the level of sacral promontory medial to the infundibulopelvic ligament and ureter, and iliac vessels were identified and exposed (Fig. 1).
2. The pararectal and paravesical spaces were dissected and the internal iliac arteries clipped with vascular clips and cut at a 4-cm distance from its origin (Fig. 2A and B).
3. The prevesical space and the Cave of Retzius were dissected (Fig. 3).
4. Colpotomy was performed and the urethra opened (Fig. 4).
5. Ilio-obturator lymph node dissection was performed using suction cannula/Harmonic ACE™ shears (Ethicon Endo-Surgery, LLC, Cincinnati, OH) (Fig. 5).
6. The specimen was retrieved vaginally in an endobag.
7. The vagina was sutured using 2.0 poly glycolic acid using continuous interlocking sutures.
8. Ureterosigmoidostomy was performed intracorporeally/extracorporeally (Fig. 6A and B).
9. A feeding tube was passed from the ureter to the sigmoid colon, and a rectal drain was inserted for monitoring urine output.
10. An abdominal drain was placed in the pelvis through 1 of the left-sided 5-mm ports.

The total duration of surgery was calculated from the insertion of the first port to the completion of the entire procedure, which included ureterosigmoidostomy. The estimated blood loss was calculated as the amount of blood collected in the suction bottle. The indication for blood transfusion was a decrease in the hemoglobin level by

**Fig. 1**

The pouch of Douglas, sacral promontory, and ureter.



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