Abstract:
Pelvic exenteration is one of the major surgery during which all contents of pelvic cavity are removed. Total pelvic exenteration is indicated in patients with advanced stage rectal carcinoma and carcinoma cervix and in cases of local recurrence of rectal cancer, recurrent carcinoma cervix after radiotherapy in tumour advanced into bladder or into other pelvic organs but disease confined to pelvis. Total pelvic exenteration can be curative, often is palliative for similar lesions that are recurrent or non responsive to radiotherapy. Although improvement in preoperative management and operative technique, especially with urinary conduits and postoperative care is clear, both early and late complications are significant. Unfortunately preoperative identification of those patients requiring Total pelvic exenteration rather than abdominoperineal or low anterior resection remains poor. Here we discuss about the three cases of Total pelvic exenteration operated for locally advanced pelvic cancers.

Keyword: TOTAL PELVIC EXENTERATION, LOCALLY ADVANCED PELVIC CANCERS

Introduction
Total pelvic exenteration is first done by Brunschwig in 1948 for advanced cervical cancer. This procedure has evolved over decades. Traditionally a multivisceral resection in the pelvis involves total extirpation of the pelvic viscera (bladder, uterus in women and rectum) with a permanent colostomy and urinary conduit. Further refinements of the technique, a Stoma-less total pelvic exenteration has also been described with coloanal anastomosis and orthotopic neobladder construction. At the same time, ultra-radical procedures like Extended Pelvic Exenteration (exenteration with sacrectomy) have also been described.
Case report

Case : 1

A 45 year old female admitted with lower abdominal pain, vomiting, nausea, and fever with chills for 5 days, history of loss of weight and appetite present and history of recurrent UTI. After 2 days of admission she had complaints of passing faeces and air during micturition. On catheterisation fecaluria drained. General condition stable, anaemic, per vaginum- tender fornix, per rectal examination normal, abdomen - soft, urine examination revealed plenty of pus cells, faecal fibres, e.coli grown in culture. On USG abdomen few air pockets seen inside the bladder. CT abdomen revealed rectal growth infiltrating to bladder and, no liver secondaries, no ascites, cystoscopy shows no identifiable fistula, colonoscopy shows growth 9 cms from anal verge. Carcinoma rectum locally advanced in stage T4 and biopsy reveals moderately differentiated adenocarcinoma and proceeded with total pelvic exenteration with sigmoid end colostomy and ureterosigmoidostomy done. Intraop findings was carcinoma rectum growth infiltrating into lateral and posterior wall of bladder in between uterus forming a mass with few pelvic nodes, no secondaries, no ascites stage III(T4N1M0). Postoperative period uneventful, no complication present, discharged on 15th postoperative day. Adjuvant chemotherapy was completed.
Case : 2
A 48 year old post menopausal lady who was diagnosed as carcinoma cervix stage IIb and completed her radiotherapy. After 6 months she got admitted with complaints of bleeding pervaginum and severe lower abdominal pain. On examination she was diagnosed to have recurrent carcinoma cervix/biopsy conformed. CT shows recurrent carcinoma cervix with bladder infiltration, no pelvic, para aortic nodes. Hence proceeded with total pelvic exenteration with sigmoid end colostomy and ureterosigmoidostomy. Patient was discharged on 19th postoperative day. Postoperative period was uneventful except for wound gaping.

Case : 3
A 55 years old male admitted with complaints of bleeding per rectum, severe lower abdominal pain, and tenesmus. On examination, growth rectum 5cm from anal verge was found. USG and CT showed growth rectum with no pelvic nodal involvement. Biopsy taken-HPE came as well differentiated carcinoma. Hence proceeded with laparotomy. Intraoperative findings – growth in rectal serosa infiltrated into posterior wall of bladder. Diagnosis made as locally advanced stage III tumour. So proceeded with total pelvic exenteration with ureterosigmoidostomy. Postoperative period was uneventful. Patient discharged on 12th POD. Adjuvant chemotherapy completed.
Discussion
Pelvic exenteration remains a formidable procedure for locally advanced pelvic cancer. The concept of metastatic inefficiency of pelvic cancer has been well explained by Weiss L. Certain selected pelvic malignancies have favorable biological characteristics that allow them to grow significantly locally without having distant metastasis. This fact is exploited when such a major ablative surgery is performed for locally advanced cancers of the pelvis.

Pelvic exenterations start with an incision in the lower abdomen. Blood vessels are clamped and the organs specified by the procedure are removed. The site of incision is then stitched up. There are three types of pelvic exenteration: anterior, posterior, and total.

TOTAL PELVIC EXENTERATION: This operation removes the bladder, urethra, rectum, anus, and supporting muscles and ligaments, together with the reproductive organs. Total pelvic exenteration is performed when there is no opportunity to perform a less extensive operation, because of the location and size of the cancer. A urinary stoma and a colostomy stoma will be created to collect waste.

ANTERIOR EXENTERATION; This operation is called anterior exenteration because it removes organs toward the front of the pelvic cavity. It usually involves the removal of the female reproductive organs, bladder, and urethra. (In males, an operation that removes the bladder and prostate is called a cystoprostatectomy). Patients selected for this operation have cancers in areas that allow the rectum to be spared.

POSTERIOR EXENTERATION; Posterior exenteration removes organs that are located in the back part of the pelvic cavity. These include the reproductive organs, plus the lower part of the bowel; the bladder and urethra are kept intact. A patient who has undergone posterior exenteration will require a colostomy, a procedure that connects the colon to the abdominal wall; waste exits the body through a stoma and is collected in a small bag.

SUPRALEVATOR EXENTERATION; The rectum is lifted off the sacral hollow posteriorly using blunt and sharp dissection. The lateral attachments are freed using the endoscopic GIA. Anteriorly, the bladder is completely freed from the pubic symphysis, and the vesicourethral junction is identified. (The resection is thus carried en bloc to the level of the levator ani.) If a supralevatorexenteration is adequate, the urethra is divided anteriorly; the rectum, posteriorly at the

Figure 10; Postop picture patient with ureterosigmoidostomy
Figure 11; perineal hernia after total exenteration of pelvis
level of the pelvic floor; and the vagina, below the level of the tumor with adequate margins. INFRALEVATOR EXENTERATION; For the perineal phase, a second team of surgeons is usually involved. A total vaginectomy and urethrectomy is accomplished by making a circumferential incision inside the vulva; if necessary, resection of the anus is also incorporated. The vagina is dissected off the levator muscles unless they have tumor involvement. If this is the case, the muscle is excised to obtain an adequate margin. The rectovaginal space is developed from above and below, and lateral rectal pillars are divided. The rectum is divided using the GIA stapler at the level of the mid vagina. Total pelvic exenteration is indicated and performed more often than anterior or posterior exenteration.

Before proceeding with the surgical procedure, confirming a recurrence with a pathologic specimen obtained by biopsy is essential. In patients who have previously had high doses of pelvic radiation, physical examination is notoriously unreliable, and bleeding and pain may be related to radiation changes rather than recurrent disease.

Indication for pelvic exenteration; Pelvic exenteration is primarily indicated for centrally recurrent cervical cancers in patients who have received definitive radiation therapy. The procedure is appropriate in patients who meet criteria for any recurrent pelvic tumor if a chance of cure exists with the procedure. On occasion, pelvic exenteration can be performed as a palliative procedure for control of local disease causing severe fistulas or other unmanageable symptoms.

Contraindications for Pelvic Exenteration; Absolute contraindications for pelvic exenteration include peritoneal metastasis, skip metastasis to the bowel, and metastases at other distant sites, such as pulmonary metastases. Relative contraindications include metastasis to retroperitoneal nodes, direct tumor invasion of adherent bowel loops, and hydronephrosis.

In patients with rectal cancer who undergo exenteration, the prognostic factors influencing survival and local recurrence are lymph node status, local extent of the disease, and primary or recurrent presentation. In patients of cervical cancer who undergo exenteration, short disease-free interval after radiation, large tumor size, lymphatic invasion, lymph node involvement, and pelvic sidewall invasion increase local recurrence and decrease overall survival. Promising results have been reported with preoperative and intraoperative radiotherapy combined with surgical resection of advanced pelvic...
tumors. Based on age, previous chemoradiation and S-phase fraction, Metersi- sian et al have developed a prognostic index to identify high- and low-risk pa- tients and predict their survival (20% and 65% respectively) The clinical triad of leg edema, ureteral obstruction, and leg pain is almost pathognomonic for disease ex- tending to the pelvic sidewall. Chemotherapy in patients with recur- rent cervical cancer is an option for patients with distant metastatic disease and for those who are not candidates for pelvic exenteration 6,14. The most signifi- cant physiologic change associated with this operation is the removal of all cancer tissue. Diversion of the urine may result in significant physiologic change. It may be associated with a higher incidence of renal disease from urinary tract infection and obstruction. These complications are less, however, than when the ureters are implanted into an intact sigmoid colon or when the ureters are implanted into an ileal or colonic loop.

Late complications3 include Intestinal ob- struction, small bowel ileus, hydronephrosis, enteroperineal fistula, pye- lonephritis, colostomy necrosis, perineal abscess, perineal hernia, renal calculus, stomal hernia, stomal stricture, uretero- ileal stricture, recurrent infection, small bowel stula, wound dehiscence, urinary incontinence, chronic lymphoedema, perineal evisceration, metabolic disor- ders, urinary stula. From varied studies rate of every complication is accounts only less than 10%. Although significant advances have been made in radiotherapy and chemotherapy, PelvicExenteration still remains an impor- tant part of the armamentarium of pelvic surgery and is the primary and occasion- ally the only treatment for the control of advanced malignancies.

Finally, it must be emphasized that the economic and psychosocial impact of pel- vic exenteration is tremendous. This be- comes even more important in the context of a developing country where there is lack of health insurance cover and psychoso- cial support organizations are few. Poverty and illiteracy combined with the relative lack of social support organizations make it difficult for the patients after exenteration to be optimally rehabilitated. These issues are of particular importance while discuss- ing the option of exenteration with the pa- tient7,8.

In our cases no specific postoperative complications occurred except one patient developed wound gaping. Patients adapted colostomy well. One patient developed perineal hernia which is diagnosed during follow up CT scan but it is asymp- tomatic one. No patients developed urinary problems like infection, pyelonephritis, ureteric stricture no one had severe pain pelvis which is common among palliative diversion colostomy patients done for in- operable cases. There was no postopera- tive death during postoperative stay.

Conclusion

Pelvic Exenteration should be considered as the treatment of choice for the control of locally advanced primary and recurrent pelvic malignancies unresponsive to ther- apy. In the field of oncology we are now focusing on multimodality approach and organ preservation in the treatment of cancer, pelvic exenteration has become an uncommonly performed procedure. How- ever, for carefully selected patients with locally advanced non-metastatic pelvic cancers, it may provide the only opportu- nity of long-term survival3.
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