

## PELVIC EXENTERATION TATA MEMORIAL HOSPITAL EXPERIENCE

KULKARNI J. N. ● TONGAONKAR H. B. ● RAMARAJAPALLI M. L.  
DESAI M. B. ● SARAIYA S.

### SUMMARY

This is a report of 18 pelvic exenterations performed between March 1985 and February 1994 for various gynaecological malignancies. Of these 11 procedures were "salvage" surgeries for recurrent pelvic disease and 7 were "primary" surgeries for locally advanced pelvic disease. The types of exenterations were "Total" in 10, "Anterior" in 7 and "Posterior" in 1. The site of the primary tumour was the cervix in 10 cases, vagina in 4 cases, endometrium, vulva and ovary in 1 each and 1 had a pelvic sarcoma in the pouch of Douglas. Histologically, 13 were squamous cell carcinomas, one adenocarcinoma, 2 sarcomas and 2 melanomas. Operative mortality due to pulmonary embolism occurred in 1 case. Nonfatal early complications (n=7) included septicaemia, urinary leak and ileus in 1 each, cardiac problems in 2 and wound infection in 2. Delayed complications were colostomy stenosis in 3; uretero-ileal anastomotic stenosis in 1 and rectovaginal fistula in 1. At follow up ranging from 6-72 months (medium 28 months), 5 (38%) are alive and disease free. Of the remaining 12 patients, 6 died of either progressive disease or relapse within 12 months, 2 died of unrelated causes at 9 and 36 months; 2 were lost to follow up after 3 months and 2 after 6 months.

### INTRODUCTION

Pelvic exenteration was first reported

by Brunschwig in 1948 for central pelvic malignancies. Ever since then, this operation had undergone critical evaluation vis-a-vis morbidity and has now

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*Tata Memorial Hospital, Bombay.*  
*Accepted for Publication on 13.12.94*

been practised only as a desperate measure for recurrent or failed pelvic malignancies and also for selected patients of non-epithelial pelvic tumors like sarcomas, or melanoma (Symmonds & Webb 1992). Proponents of this procedure claim the successful control of local disease in radiation failures prevention of internal fistulae, bleeding and intractable pain from the relapses and improvement in the quality of life (Plukkar et al 1992). However, a 30-40% salvage rate and 2-3% mortality are worthwhile considerations. This procedure, can at best, offer a ray of hope to these patients.

#### **MATERIAL AND METHODS**

Between March 1985 and February, 1994, 18 patients underwent pelvic exenteration for primary or salvage therapy of gynaecologic malignancies at Tata Memorial Hospital. Records of these patients were reviewed for details of pre-operative status, operative procedure, post operative course, complications and survival.

Pre-operative work up in these patients included a detailed medical history of physical examination. Laboratory studies included haematocrit, biochemistry, liver and renal function studies. The extent of the disease was confirmed by sonography/CAT/MRI studies. After complete investigations and confirmation of the pathology, the patients were staged as per the standard criteria and treated accordingly. Post treatment they were followed up to note the response to treatment at 3 monthly intervals for 24 months and later 6 monthly intervals for 60 months.

**Criteria for the Exenteration :** All

the epithelial carcinomas of cervix had undergone some primary treatment in the form of either radiotherapy or radiotherapy and surgery and exenterations were performed as "desperate" measures for relapses. Nonepithelial tumours and selected locally advanced vaginal carcinomas underwent "Primary exenteration." The other important criteria were-age less than 60 years; no major medical problems and the patient's will to accept urostomy or colostomy or both. Recurrence was proved by histology in all cases.

Postexenteration, patients were followed up regularly to note the relapses, metastasis, status of kidneys and stomas as well as complete psychosocial rehabilitation.

#### **RESULTS**

The mean age of the patients in our series was 47 years (28-65 years). Site of the primary tumor was cervix in 10, vagina in 4, ovary, endometrium and vulva in 1 each and sarcoma arising from the pelvis (pouch of Douglas) in 1 (Table I). All 10 patients with carcinoma cervix underwent exenteration for pelvic relapse following complete radiotherapy (10 GY) in 8 and pre-operative radiotherapy (30 GY and Wertheim-Meig's hysterectomy in 2. The interval between primary treatment and relapse ranged between 6-18 months. The patient with endometrial carcinoma had undergone an abdominal hysterectomy six months prior to relapse for suspected dysfunctional uterine bleeding. The remaining 7 patients underwent exenteration as "primary" treatment. Of them, 4 had vaginal tumors, 1 had a vulval melanoma and 1 each had an ovarian and



**Table I**  
**Tumour Site & Primary Treatment**

Site	No. of Patients	Primary therapy				No. Tt.
		RT	RT + S	S	C	
Cervix	10	8	2	-	-	-
Vagina	4	-	-	-	-	4
Ovary	1	-	-	-	1	-
Endometrium	1	-	-	1	-	-
Vulva	1	-	-	-	-	-
Pouch of Douglas	1	-	-	-	-	-

RT - Radiotherapy

S - Surgery

C - Neoadjuvant chemotherapy

a pelvic sarcoma in the pouch of Douglas. The patient with ovarian tumor had taken 3 courses of neo-adjuvant chemotherapy with minimal response.

10 patients - 5 patients with carcinoma cervix and 1 each with endometrial, vulval, vaginal, ovarian and pelvic malignancies (Table II). Of the remaining 8 patients, 5 with cervical carcinoma and 2 with vaginal carcinoma and anterior exenteration (n=7) and 1 patient with vaginal

**OPERATIONS**

"Total" exenteration was performed in

**Table II**

**Type of Exenteration**

Tumour site	Type of operation		
	Total pelvic Exenteration	Anterior Exenteration	Posterior Exenteration
Cervix	5	5	-
Vagina	1	2	1
Ovary	1	-	-
Endometrium	1	-	-
Vulva	1	-	-
Pouch of Douglas	1	-	-
<b>Total</b>	<b>10</b>	<b>7</b>	<b>1</b>

melanoma had posterior exenteration. The Ileal conduit type of urinary diversion was required in 17 cases (10 Total and 7 Anterior exenterations) while 10 required additional sigmoid colostomy and 1 required only sigmoid colostomy. The mean operative time was 5 hrs (4-7 hrs) with a mean blood loss of 1200 mls (600-2400 mls). Mean Hospital stay was 12 days (9-21 days).

#### COMPLICATIONS

As seen in Table III 8 (44%) patients had early post-operative complications, which included a single operative mortality (5.6%) due to pulmonary embolism. This patient was a case of carcinoma endometrium who had undergone a total exenteration. Moreover, 7 early complications occurred in patients previously treated by radiation who required total exenteration. Amongst 7 non-fatal early complications, septicemia, urinary leak and ileus occurred in 1 each, cardiac problems in 2, wound infection in 2. Delayed complications (n=4) were

related to colostomy stenosis in 3 and uretero-ileal anastomotic stenosis in 1.

Histologically the tumours were of the high grade squamous or adenocarcinomas in cervix, vagina and endometrium. Non-epithelial tumors were melanoma (vagina and vulva) in 2, sarcoma (ovary and pouch of Douglas) in 2.

#### FOLLOW UP

Total 5 (38%) patients are alive and disease free at 6-72 months follow up (median 29 months). Of them 4 had carcinoma of cervix and 1 had carcinoma vagina of the remaining 13 patients, 1 died due to post operative pulmonary embolism, 6 died within 12 months 4 due to relapse and 2 due to progressive disease. Two died due to unrelated causes at 9 and 36 months. The remaining 4 were lost to follow up 2 after 3 months and 2 after 6 months at which time they were free of disease.

#### DISCUSSION

Traditionally pelvic exenterations have been performed in recurrent cervical and pelvic malignancies (Plukkar 1993) as a palliative measure to improve the quality of life. Non-epithelial tumors like sarcomas or melanomas which are locally invasive and less responsive to conventional radiotherapy require aggressive local treatment and therefore are suitable candidates for exenteration as a first measure (Symmonds & Webb 1992, Kraybill et al 1988).

The important issue is the morbidity and mortality related to surgery. With the advent of newer anaesthetic techniques and supportive care facilities, the

**Table III**  
**Early Complications**

Complications	No. of patients
Pulmonary embolism	1
Septicemia	1
Urinary leak	1
Ileus	1
Cardiac problem	2
Wound infection	2



mortality has been drastically reduced. Single mortality in our series further emphasized the above mentioned factors. Others (Monaghan 1985, Symmonds & Webb 1992) have reported similar low mortality rates (2-7%) pointing towards the safety of the procedure. Other non-fatal complications like sepsis and urinary leaks are related directly to the previous radiotherapy, low nutritional status and advanced nature of the disease. Similar observations have been made by Roberts et al 1987. Barber (1987 and Lawhead et al (1989) have also shown that complications are directly related to the extent of surgery i.e. higher complication rate (70%) observed in total exenteration patients as compared to anterior exenteration (14%). Although our series is small we also had higher complications in patients who required total exenteration. In spite of the diligent and excellent technical execution of the procedure, 4 patients had residual disease left behind, because of inaccessible areas (below the obturator nerves and in the presacral regions) and hence these patients had progressive disease and fatal outcome. Similar observations have been reported by others (Plukker et al 1993, Talledo 1985, Kraybill et al 1988). Thus the final outcome of the procedure depends upon complete clearance of the disease, previously untreated patients and to some extent favourable histology like low grade tumors. Generally, relapses occur in 12-24 months and are non-salvage. Our result of 38% disease free survival appears acceptable in lieu of the fact that majority of operations were salvage attempts

(12/18) and truly "desperate measures".

In conclusion, pelvic exenteration can be an acceptable operation for an experienced team in management of locally advanced non-epithelial tumors of the pelvis and in selected patients of radiation failures of cervical and other epithelial tumors. To improve the survival benefit in advanced stage disease pre-exenterative radiotherapy followed by surgery appears an attractive alternative which has not been tried out and can be thought of as a planned therapy module. Lately, considerable enthusiasm has been generated on offering continent urinary stomas (Kulkarni et al 1992) with the hope of improving the quality of life and preserving the patient's self image. Since our unit is committed to continent urostomies for the last 7 years, we propose to extend this facility to all patients who are destined to undergo exenteration requiring urostomy in future.

**REFERENCES**

1. Barber HR : *Cancer Invest* : 5;331;1987.
2. Brunschwig A : *Cancer* : 1;177;1948.
3. Kulkarni J.N., Tongoankar HB, Ravi R, Kamat MR : *Brit. J. Urology* : 69;513;1992.
4. Krabill W.G., Lopez M.J., Bricker E.M. : *Surg. Gynec. Obstet.* : 166;259;1989.
5. Lawhead RA Jr, Clark DGC, Smith DH, Pierce VK, Lewis JL : *Jr. Gynec. Oncol.* : 33;279;1989.
6. Monaghan J.M. : *Clin. Obstet. & Gynec.* : 12;169;1985.
7. Plukkar JTH, Aalders JG, Mensink HJA, Oldhoff J ; *Brit. J. Surg.* 80;1615;1993.
8. Roberts W.S., Cavanagh D., Bryson S.C.P.: *Obstet. & Gynec.* : 69;617;1987.
9. Symonds R.E., Webb M.F.P. : *Gynecologic Oncology* : 2nd edition : 1992, 1283, Churchill Livingstone, New York.
10. Talledo, Q.E. : *Gynec. Oncol.* : 22;181;1985.