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RADICAL CYSTECTOMY FOR CARCINOMA OF THE BILHARZIAL BLADDER

By M. A. GHONEIM, M.Ch.

Department of Urology, Mansoura Faculty of Medicine, Mansoura, Egypt

M. A. MANSOUR, M.Ch., and M. N. EL BOULKANY, Ph.D.

Department of Surgery and Pathology, Cancer Institute, Cairo, Egypt

CARCINOMA of the Bilharzial bladder in Egypt presents certain particular features, which have been reported before by several authors; viz., Makar (1955), El Sebai (1961). Most of the cases present in an advanced stage, the tumours are usually of the squamous cell type, and are radio-resistant. Cystectomy with urinary diversion seems to be the logical treatment of such cases. This study covers our experience with 137 consecutive patients treated by radical cystectomy for Bilharzial carcinoma of the bladder. The extent of the radical operation is to remove the bladder with its perivesical fascia, peritoneal covering, the prostate, and seminal vesicles; together with the external and internal iliac lymph nodes. In females, the bladder, urethra, uterus, adnexa and upper half of the vagina with pelvic cellular tissue and the above-mentioned lymph nodes are removed.

Material and Method.—The composition of the group as regards age and sex is present in Table I. The male to female ratio was 3·4 : 1. The average age for males was 46 years, for females 37·5 years, and for the whole series 44 years.

TABLE I

Age and Sex Distribution of 137 Patients treated by Radical Cystectomy

	Age in Years								Total
	25-	30-	35-	40-	45-	50-	55-	60+	
Males . .	3	1	13	38	22	19	4	6	106
Females .	4	2	6	8	4	6	1	...	31
Total .	7	3	19	46	26	25	5	6	137

Surgical Technique.—(A) *In the Male.*—A lower right paramedian incision, extending from 2 inches above the umbilicus to the symphysis pubis is employed. The pelvis and the abdominal cavity are explored. The growth is palpated and the degree of mobility of the bladder is assessed. If it is decided to proceed with the radical operation, the operating table is tilted into a high Trendelenburg position and the intestines packed out of the pelvis. The peritoneal incision is extended postero-laterally on either side, along the lateral border of the external iliac vessels up to the common iliac bifurcation. The vas deferens is divided and ligated near the internal ring. The fascia on the ilio-psoas is incised and dissected medially. It will be found to be continuous with the connective tissue covering the external iliac vessels. The fibro-fascial sheath covering these vessels is stripped medially to remove the perivascular lymphatics and

lymph nodes. The vessels are gently retracted laterally, and immediately medial and below the now cleaned external vein, the obturator space is exposed. By working right on the psoas and obturator internus muscles, all the pelvic fascia is stripped medially without difficulty. The obturator neurovascular bundle is included in the stripped mass. The obturator nerve is identified and separated from the vessels, which are divided and ligated as they leave the pelvis through the obturator foramen. The fibro-lymphatic mass is now reflected medially. The internal iliac artery is dissected free and ligated in continuity; the branches of its anterior division are divided and ligated.

The ureter is identified where it crosses the common iliac bifurcation, dissected free for 3-4 cm., then divided and its distal end ligated. At this stage, with the pelvic fascio-visceral mass displaced medially, the anatomical structures on the side wall of the pelvis are seen free of all fascial structures. The same dissection is now repeated on the other side of the pelvis.

The reflection of the peritoneum from the rectum to the seminal vesicles and bladder is then incised. The space between the anterior structures and the rectum is opened by a combination of blunt and sharp dissection. A thick wide fascial band will thus result on either side, connecting the bladder, vesicles and prostate anteriorly to the sides of the rectum posteriorly. (The vesico-prostato-pelvic fascia.) It is divided piecemeal between clamps which are underrun later.

The bladder is now free posteriorly and laterally, and the dissection is then carried anteriorly dividing the median pubo-prostatic ligaments on either side between clamps. A curved clamp is placed on the urethra distal to the prostate, and the specimen is excised. Final hæmostasis is achieved by inserting deep catgut sutures between the edges of the levator ani muscles on either side. No attempt is made to reperitonealise the pelvis. Drainage is achieved by a suprapubic sump tube.

TABLE II

Methods of Urinary Diversion

	No.	%
Rectal bladder . . .	81	59·1
Uretero cutaneous . . .	43	31·4
Uretero colic	11	8·0
Ileal conduit	2	1·5
Total	137	100·0

(B) *In the Female.*—The technique differs only in its posterior phase. The peritoneum at the floor of the pouch of Douglas is incised. The rectum is separated from the vagina by blunt dissection. The vesico-vagino-rectal fascia, including the utero-sacral ligaments, now present as a broad fascial sheet on either side, connecting the bladder and the vagina anteriorly with the rectum posteriorly. It is cut piecemeal between clamps which are underrun by catgut. The vagina is incised 2 inches above the introitus. The posterior aspect of the urethra is thus exposed, which is now clamped, and cut distal to the clamp. The cut edges of the vagina are sutured around a sump drainage tube.

The different methods used for urinary diversion are given in Table II.

RESULTS

(A) *Mortality and Morbidity.*—Twenty patients did not leave the hospital alive; an operative mortality rate of 14·6 per cent. The different causes are outlined in Table III.

Twenty-five patients developed 32 post-operative non-fatal complications (Table IV).

TABLE III

Post-operative Mortality

Peritonitis	11
Shock	3
Septicæmia	2
Renal failure	2
Pulmonary embolism	1
Coronary thrombosis	1
Total	20 or 14·6%

TABLE IV

Post-operative Morbidity

Shock	2
Septic complications: wound sepsis	12
pelvic collections	5
Chest infection	10
Burst abdomen	3
Total	32

TABLE V

Results of Follow-up

Year Period of follow-up in years	67 3+	68 2+	69 1+	70 −1	Total
No. of cases	42	39	41	15	137
Operative mortality	9	4	6	1	20
Recurrence	9	7	11	5	32
Untraced	4	2	2	0	8

N.B: Operative mortality = 20
Untraced cases = 8
No. of patients followed up = 109

TABLE VI

Onset of Recurrence after Operation in 137 Cases

Onset of Recurrence (Months after Start of Surgery)	Number of Cases	
	No.	%
Less than 3	9	28·1
3-6	12	37·5
6-9	6	18·8
9-12	2	6·2
More than 12	3	9·4
Total	32	...

TABLE VII
Recurrence and Tumour Stage

	P.1	P.2	P.3	P.4	Total
Cases with recurrence .	...	2 (20%)	21 (25·4%)	9 (56·2%)	32
Cases without recurrence .	...	8 (80%)	62 (74·6%)	7 (43·8%)	77
		10	83	16	109

TABLE VIII
Recurrence and Tumour Histology

	Squamous	Transitional	Adenocarcinoma	Total
Cases with recurrence .	19 (26·3%)	11 (35·5%)	2 (33·3%)	32
Cases without recurrence .	53 (73·7%)	20 (64·5%)	4 (66·6%)	77
Total . .	72	31	6	109

TABLE IX
Recurrence and Tumour Grade

	Grade I	Grade II	Grade III	Total
Cases with recurrence .	6 (20%)	11 (25·8%)	15 (41·7%)	32
Cases without recurrence .	24 (80%)	32 (74·2%)	21 (58·3%)	77
Total . . .	30	43	36	109

TABLE X
Recurrence and Lymph Node Involvement

	Positive Lymph Nodes	Negative Lymph Nodes	Total
Cases with recurrence .	9 (56·2%)	23 (24·8%)	32
Cases without recurrence .	7 (43·8%)	70 (75·2%)	77
Total . . .	16	93	109

(B) *Follow up and Recurrence.*—Table V summarises the outcome of this series, as followed up to January 1971.

The time of onset of recurrences as detected clinically after the start of treatment is given in Table VI.

The recurrence rate was retrospectively correlated to four pathological features; viz., the tumour stage (Table VII), the tumour histology (Table VIII), the tumour grade (Table IX) and the lymph node involvement (Table X).

DISCUSSION

The general technical principles employed are similar to those described previously by Paquin and Marshall (1956) and El Sebai (1956). No attempt was made to reperitonealise the pelvis as recommended by Robbins *et al.*, (1949).

The operative mortality of 14·6 per cent compares favourably with other reported figures. Paquin and Marshall (1956) gave a figure of 17 per cent, El Sebai (1962) a figure of 17 per cent, and Whitmore (1962) a figure of 14 per cent. The most important single cause for post-operative mortality and morbidity was septic complications. This can be attributed to the following factors:

1. The length of the operative procedure, with extensive dissection and wide raw area exposed.
2. The necessity of some form of urinary diversion with the attended risk of contamination with infected urine.
3. The mechanical difficulties encountered in proper drainage of the dependent pelvic cavity.

The low incidence of cardiovascular complications in this series can be attributed to the fact that we were dealing with relatively young patients; the average age being 44 years.

Rectal bladder with a terminal left iliac colostomy was the most common method employed for urinary diversion. The technique and the advantages of this procedure were discussed in a previous publication. (Ghoneim, 1970).

Due to the short period of follow-up, the prognosis of this type of cancer, as treated by radical cystectomy, was deduced from correlating the various pathological features of the tumours with the frequency of recurrence, rather than with survival rate. Three factors were found to be statistically significant:

1. The tumour stage.
2. The tumour grade.
3. Positive involvement of the regional lymph nodes.

Since most of the cases (77 per cent) are of the P.3 stage, and since the state of lymph node involvement cannot be clinically assessed, the most important single clinical feature which can influence the prognosis is the tumour grade, a factor which has also been emphasised by Thompson (1960).

More than half of the recurrences occurred within six months of commencement of treatment. Moreover, all the recurrences but two were (localised) in the pelvic cavity. This would suggest that in recurrent cases surgical excision alone was inadequate to deal with the extent of the local pathology. Post-operative irradiation may improve the survival rate, a regime which is now employed in a new series.

SUMMARY

Our experience with 137 consecutive patients with Bilharzial carcinoma of the bladder treated by radical cystectomy, has been outlined.

The surgical technique is described; the post-operative mortality being 14·6 per cent. One hundred and nine patients were followed up for periods between 6 months and 3 years. The incidence of recurrence was found to be statistically related to the tumour stage, grade and positive lymph node involvement. Longer follow-up period is needed for calculation of survival rates. However, from the analysis of these preliminary results, post-operative irradiation is recommended to decrease the incidence of local recurrences.

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