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LEIOMYOSARCOMA OF THE URINARY BLADDER WITH REVIEW OF THE LITERATURE*

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LEIOMYOSARCOMA is one of the smallest histologic classes of malignant tumors of the bladder. A review of the literature from 1875, when Gussenbauer¹² reported the first case from Billroth's Clinic, revealed reports of only 50 cases. It is possible, of course, that a few cases were not discovered. It is also true that later authors have questioned the diagnosis in some of the cases reported as leiomyosarcoma.

Recently, we had the opportunity to treat and study a case of leiomyosarcoma and another case of leiomyosarcoma co-incident with carcinoma of the urinary bladder.

CASE REPORTS

CASE 1 (S. H. A.) — A 37-year-old white female was first seen August 30, 1960, with symptoms of dysuria and frequency of urination of two months duration. She had also noted gross hematuria several times since the onset of symptoms. The physical examination was negative. Endoscopy and cystoscopy under local anesthesia revealed a smooth, glistening tumor, 4 x 5 cm., with a base of 3 cm. in diameter on the left posterior dome of the urinary bladder.

The patient was admitted to the hospital September 7, 1960. On admission, her hemoglobin level was 10.5 gm. Her urine showed a Ph of 5; specific gravity 1.015, sugar negative, albumin 4+, with numerous white and red blood cells. Serology was negative. BUN 10 mg. per cent. Chest x-ray and intravenous pyelograms were normal.

September 8, 1960, under spinal anesthesia, exploratory laparotomy through a transverse suprapubic incision revealed no evident spread of the tumor. Owing to firm adhesions between the bladder and the peritoneum overlying the area of the bladder encompassing the tumor, this portion of the peritoneum was left attached to the bladder wall and the peritoneal defect was closed with continuous No. 3-0 chroic catgut suture. The bladder then was opened and the tumor plus a 2.5 cm. margin of grossly normal bladder was resected. The bladder was closed and a Penrose drain was left in the space of Retzius. A No. 24 urethral catheter was left indwelling, connected to straight drainage.

The postoperative course was uneventful and the patient was discharged September 21, 1960.

The patient returned December 1, 1960, for routine cystoscopic examination three months postoperatively and no evidence of recurrent tumor was found. Cystoscopy, March 3, 1961, six months after operation also revealed no evidence of recurrence of tumor.

CASE 2 (E. D.) — A 71-year-old white female was seen September 7, 1960, with symptoms of frequency, urgency and dysuria associated with gross hematuria of three to four weeks duration. Past history revealed: absolute glaucoma, left eye; enucleation, right eye; severe arteriosclerotic heart disease with moderate congestive heart failure; hypertensive cardio-

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vascular disease; hiatus hernia; duodenal ulcer; duodenal diverticulum; diverticulosis and diverticulitis of the colon, and a large incisional ventral hernia.

Mild tenderness was present over the entire abdomen. The liver was smooth and palpable two centimeters below the right costal margin. Pelvic examination revealed a large, tender mass in the region of the urinary bladder, extending to the left lateral pelvic wall.

The urine showed albumin 2+, sugar negative and numerous white and red blood cells.

Subsequent endoscopy and cystoscopy revealed a large necrotic tumor involving the whole floor and left wall of the bladder, including the trigone. Neither ureteral orifice could be identified. Transurethral resection biopsy of the bladder tumor revealed the presence of leiomyosarcoma and carcinomatous elements.

The patient was admitted to the hospital September 19, 1960. On admission, her hemoglobin was 11.5 gm., the WBC was 20,150 and the BUN was 23 milligrams per cent. Intravenous pyelograms revealed non-function of the left kidney with poor visualization of the right kidney. A chest x-ray was normal except for cardiomegaly. A barium enema was negative except for diverticulitis throughout the colon. Lumbosacral spine x-rays showed degenerative arthritis. Proctoscopy revealed a small polyp which was excised and was reported as benign.

Because of the patient's very poor general condition and the obvious spread of the tumor on pelvic examination, palliation was felt to be the treatment of choice. By transurethral resection of the bladder tumor 85 gm. of tissue were removed September 22, 1960. Further palliation was then given with cobalt radiation, the patient receiving a total of 5800 roentgens through a 10 by 12 cm. port over a period of six weeks. While under treatment, the patient became very weak and developed nausea, vomiting, and anorexia. She became dyspneic and a large left pleural effusion developed. Thoracentesis was performed and cell block was positive for malignant cells. The patient's condition progressively worsened and she expired November 15, 1960. Permission for autopsy was refused.

DISCUSSION AND CONCLUSION

Leiomyosarcoma may occur at any age but is more frequently found between the ages of 50-60. It occurs twice as often in males as in females (Table I). Because of the extreme malignancy of the tumor, the prognosis is grave, death usually occurring within a year after the onset of symptoms.

Out of this series of 50 cases of leiomyosarcoma, there have been some apparent cures although reported follow-up has been limited from one to eleven years. Hager and Hunt¹³ in 1929 reported a patient with leiomyosarcoma of the urinary bladder who lived four years after operation. The longest follow-up is reported by Smith and Kellert²² whose patient had a normal bladder, cystoscopically, eleven years after

Table I
Cases of leiomyosarcoma of the bladder reported since 1875, by age and sex

Age	Male	Female
1-10	4	0
11-20	1	3
21-30	3	0
31-40	1	4
41-50	4	2
51-60	12	4
61-70	5	1
Over 70	2	0
Not stated	4	0
	<hr/> 36	<hr/> 14

Cases from this report and from the literature (references 1-36)

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segmental resection. Lash¹⁸ reported his patient had no recurrence after three years follow-up. The patient of Petkovic²⁵ was reported in good health and no recurrence 18 months after segmental resection of his bladder and x-ray therapy. Flint and Dick¹⁰ reported their case of no recurrence after one year following segmental resection of the bladder. Bergman and Kugel⁴ reported a case who lived two years after total cystectomy and bilateral ureterocutaneous anastomosis and died of causes unrelated to his bladder condition. Peiris and Cooray's²⁴ patient was alive, well and free from local recurrence or metastasis nearly two years after total cystectomy and transplantation of the ureters.

Unfortunately, leiomyosarcoma may grow outwardly and peripherally for a considerable time before invading the mucosa and causing hematuria. Unlike rhabdomyosarcoma, it is more likely to have its origin in the wall of the urinary bladder, rarely arising from the trigone. The tumor is usually lobulated and pedunculated and has a tendency to local growth and recurrence rather than distant metastases. The apparently improved survival in recent years reported by several authors is probably attributable to earlier diagnosis, more complete removal of the tumor and better preoperative and postoperative care.

At present, definitive treatment should consist of wide excision of the tumor either by segmental resection, if that is sufficient, or by total cystectomy of the closed bladder with transplantation of the ureters to a loop of ileum. Since this tumor is not especially radiosensitive, cobalt therapy is better reserved for palliative treatment. Due to its rarity, treatment of this tumor with chemotherapeutic agents has not yet been evaluated.

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