

Squamous cell carcinoma of the bladder in a patient on intermittent self-catheterization

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■ Squamous cell carcinoma of the bladder has been associated with exstrophy, defunctionalized bladders, chronic infection, cystolithiasis, and chronic indwelling catheters. We report a case of squamous cell carcinoma of the bladder in a woman performing intermittent self-catheterization for the previous 14 years.

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LEAN INTERMITTENT self-catheterization (ISC) has been increasingly used in the management of lower urinary tract dysfunction since the technique was popularized by Lapides et al in 1972. The association between chronic indwelling catheter bladder drainage and squamous cell carcinoma or metaplasia is well known²⁻⁴; however, only a single case of papillary adenoma in conjunction with ISC has been reported in the literature. We report a case of a malignant bladder neoplasm following ISC.

CASE REPORT

An 80-year-old white woman presented to the Cleveland Clinic in September 1988 with gross hematuria, which had occurred once before, in November 1983. She had no history of smoking. She was treated in 1941 with a radium implant for carcinoma of the cervix, and there was no evidence of recurrent disease. In 1974, during an evaluation for chronic pyelonephritis and vesicoureteral reflux, she was found to have neurogenic bladder dysfunction.

follow-up was continued.

When she presented in September 1988, her intravenous pyelogram was still unchanged; however, urine cytology revealed malignant cells. Cystoscopic examination revealed a sessile tumor on the left posterolateral bladder wall. Transurethral resection was performed, and microscopic sections revealed an invasive, keratinizing squamous cell carcinoma.

Subsequent management included ISC four to five

times daily, anticholinergic medication, and suppres-

sive antibiotic therapy. The patient was followed on a

yearly basis; asymptomatic bacteriuria was frequently

noted. Urine cultures were often positive for Klebsiella

pneumoniae. In November 1983, she experienced an

episode of gross hematuria; the intravenous pyelogram

was unchanged, and cystoscopy was negative. Routine

Random biopsies of the bladder mucosa were negative. Because of the location of the lesion and the patient's age, a partial cystectomy was performed, without complications.

Histologic examination of the surgical specimen revealed that the tumor extended through the muscularis and was near but not at the serosal surface (*Figure*). Margins of the surgical specimen and biopsies of the right and left pelvic lymph nodes were negative for tumor (T3A-N0-M0). No definite radiation changes were present in either the biopsy specimen or the surgical specimen.

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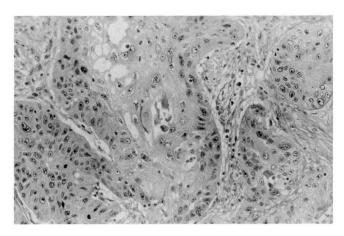


FIGURE. Cystectomy specimen (hematoxylin and eosin stain, \times 62) shows nests of invasive keratinizing squamous cell carcinoma within the bladder wall.

COMMENT

In the United States, between 1973 and 1977, only 2.7% of newly diagnosed bladder cancers were squamous cell carcinomas. The incidence of squamous cell carcinoma of the bladder is higher in males than in females and is relatively higher in the black population. Risk factors for the development of squamous cell bladder carcinoma include cigarette smoking, industrial exposures to arylamines, chronic catheter bladder drainage, and a history of recurrent urinary tract infection.

Our patient's only risk factor was chronic

asymptomatic bacteriuria associated with a 14-year history of clean ISC.⁸ She is white and has no smoking history or significant industrial exposure, having been a housewife since age 20.

External beam radiation in the treatment of cervical carcinoma has been implicated in metachronous malignancies; however, studies both support and dispute an increased incidence of bladder tumors following pelvic irradiation.⁹⁻¹³ Our patient underwent radium therapy for cervical carcinoma in 1941. There was no history of external radiotherapy, and none of the skin changes typical of the orthovoltage radiation used at that time were present on the patient's abdominal wall. Examination under anesthesia revealed a mobile pelvis.

Case reports linking external irradiation to bladder tumors show a mean time interval of 9 years after therapy, with a range of 6 months to 20 years. 9-13 Our patient presented 40 years after internal radium therapy of the cervix with a lesion located away from the trigone, the region that would theoretically be susceptible to incidental radiation effect.

Despite the widespread use of clean ISC in the management of lower urinary tract dysfunction, bladder malignancy has not been previously reported, to the best of our knowledge. Our patient's tumor appeared on the posterolateral bladder wall, an area that might have sustained repeated trauma owing to ISC. What screening should be performed on patients performing ISC and at what intervals is not clear; however, all ISC patients should undergo evaluation including cystoscopy for episodes of hematuria.

REFERENCES

- Lapides J, Diokno AC, Silber SJ, Lowe BS. Clean, intermittent self-catheterization in the treatment of urinary tract disease. J Urol 1972: 107:458.
- Locke JR, Hill DE, Walzer Y. Incidence of squamous cell carcinoma in patients with long-term catheter drainage. J Urol 1985; 133:1034.
- Broecker BH, Klein FA, Hackler RH. Cancer of the bladder in spinal cord injury patients. J Urol 1981; 125:196.
- Kaufman JM, Fam B, Jacobs S, et al. Bladder cancer and squamous metaplasia in spinal cord injury patients. J Urol 1977; 118:967.
- Sakashita S, Matsuda H, Nagamori S, Sakakibara N, Maru A, Koyanagi T. Papillary adenoma of the bladder in a patient with intermittent self-catheterization. Urol Int 1988; 43:107.
- Kantor AF, Hartge P, Hoover RN, Fravmeni JF Jr. Epidemiological characteristics of squamous cell carcinoma and adenocarcinoma of the bladder. Cancer Res 1988; 48:3853.
- 7. Schroder LE, Weiss MA, Hughes C. Squamous cell carcinoma of the

- bladder: an increased incidence in blacks. Urology 1986; 28:288.
- 8. Maynard FM, Diokno AC. Urinary infection and complications during clean intermittent catheterization following spinal cord injury. J Urol 1984; 132:943.
- Duncan RE, Bennet DW, Evans AT, Bernard SA, Schellhas HE. Radiation-induced bladder tumors. J Urol 1977; 188:43.
- Dikson RJ. Late results of radium treatment of carcinoma of the cervix. Clin Radiol 1972; 23:528.
- Hoffman M, Roberts WS, Cavanagh D. Second pelvic malignancies following radiation therapy for cervical cancer. Obstet Gynecol Surv 1985; 40:611.
- Kapp DS, Fischer D, Grady KJ, Schwartz PE. Subsequent malignancies associated with carcinoma of the uterine cervix; including an analysis of the effect of patient and treatment parameters on incidence and sites of metachronous malignancies. Int J Radiat Oncol Biol Phys 1982; 8:197.
- 13. Hamberger AD, Fletcher GH, Warton JT. Results of treatment of early stage I carcinoma of the uterine cervix with intracavitary radium alone. Cancer 1978; 41:980.