

A case of transitional cell carcinoma seeding of small bowel anastomosis after radical cystoprostatectomy

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LAZAROU SA, JAMAL M SHORT T. A case of transitional cell carcinoma seeding of small bowel anastomosis after radical cystoprostatectomy. The Canadian Journal of Urology. 2003;10(4):1945-1946.

We present a case in which a man developed transitional

cell carcinoma of the small bowel 6 months after having undergone a cystoprostatectomy and ileal conduit urinary diversion.

Key Words: transitional cell carcinoma, cystoprostatectomy, ileal conduit

Case report

A 57 year old veterinarian presented with gross painless hematuria for 1 month. Cystoscopy revealed a large bladder mass. Abdominal and pelvic CT scanning confirmed thickening of the anterior, lower third aspect of the bladder. Streaky densities were also seen between the edge of the thickened bladder and adjacent fat. No obvious lymphadenopathy was seen in the abdomen or pelvis. There was an incidental horseshoe kidney. Transurethral resection of bladder was performed confirming muscle invasive transitional cell carcinoma, high grade, WHO grade 3/3.

The man subsequently underwent a radical cystoprostatectomy with ileal conduit urinary diversion. There was no identified intra-operative tumor or urine spillage. The pathology report indicated invasive transitional cell carcinoma of bladder, high grade, WHO grade 3/3. There was tumor invading the full thickness of muscularis propria, extending into perivesical fat and to the serosa of the dome of the bladder. There was extensive lymphovascular invasion. All margins including ureteral and urethral were clear and all removed lymph nodes were negative for tumor. The pathological stage was pT3bN0Mx. He was given adjuvant gemcitabine/platinum-based systemic chemotherapy, of which he was only able to complete 2 1/2 cycles after developing thrombocytopenia and a low white blood cell count.

Approximately 6 months after surgery, he

Accepted for publication July 2003

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presented with a partial small bowel obstruction. CT imaging revealed several areas of irregular thickening involving the ileum. Situated just under the umbilicus, there were two hypodense lesions identified, each measuring 3.4 cm X 2.7 cm with ill-defined margins. Each lesion had central cavitory air inseparable from the ileum.

This man then underwent a laparotomy. A mass was found at the intestinal anastomosis. Forty-five centimetres of small bowel was excised. No other evidence of recurrence was noted in the abdomen or pelvis at the time of surgery. The pathology revealed metastatic transitional cell carcinoma, high grade, with two foci measuring 4 cm and 7 cm in dimension with extension through intestinal wall with erosion and ulceration of small intestinal mucosa. The resection margins were free of tumor.

Discussion

To date, there have been no documented case reports in the literature of isolated metastatic transitional cell carcinoma to the small bowel anastomosis after cystectomy and urinary diversion.

Transitional cell carcinoma's propensity for implantation has been well documented. It has been reported to recur following both endoscopic (transurethral and percutaneous) as well as open surgeries. Bladder perforation during endoscopic resection has been reported to result in abdominal tumor seeding or metastases.¹ TCC may recur in abdominal wounds, resected prostatic fossa, traumatized urethra, or along percutaneous nephrostomy tracts.^{2,3} Implantation occurs most commonly with high-grade and multiple tumors.⁴ Much of our recent understanding of TCC seeding comes from our experience with percutaneous management of upper tract TCC. Seeding along the nephrostomy tract has been noted with very low frequency after percutaneous treatment of upper tract TCC, suggesting the greatest risk with high grade tumors.³ Tumor recurrence in the renal fossa has been reported in patients who have undergone intraoperative pyeloscopy followed by immediate nephroureterectomy.⁵

Many different methods of preventing tumor seeding have been suggested, many on the basis of anecdotal evidence alone. Minimizing trauma, as well as carefully avoiding tumor spillage are general surgical principles. Irrigation (both intraabdominal as well as intravesical) with sterile water has been routinely employed. Changing of gloves and surgical set-ups once the specimen has been passed off has been

suggested as well. In fact, there is debate about whether urothelial biopsies at the time of transurethral resection of bladder tumor may pose a risk for implantation.⁶ Irrigation of a percutaneous tract and collecting system with 5-FU to lessen the possibility of tumor recurrence has been attempted as well.⁷ Recently, antiadherence agents have shown promise, and are currently under investigation.^{8,9} Perioperative use of intravesical chemotherapy has been shown to decrease recurrence rate of superficial TCC post TURBT.¹⁰

In this case, an isolated metastasis to the small bowel anastomotic site occurred 6 months following cystectomy. We postulate this seeding must have occurred at the time of the original surgery. Urologists need to carefully consider the very real possibility of tumor implantation, particularly in the setting of high grade disease. Because the occurrence of implantation is so low, it is unlikely that good clinical studies will be available in the near future. We believe urologists ought to weigh carefully the potential benefits of adopting some of the principles outlined above, particularly given the minimal risk of implementing many of these. □

References

1. Mydlo JH, Weinstein R, Shah S, et al. Long-term consequences from bladder perforation and/or violation in the presence of transitional cell carcinoma: Results of a small series and review of the literature. *J Urol* 1999;161:1128.
2. Weldon TE, Soloway MS. Susceptibility of urothelium to neoplastic cellular implantation. *Urology* 1975;5:824.
3. Jammour M, Smith A. Minimally Invasive Surgery of the Kidney: Primary Percutaneous Approach to Upper Tract Transitional Cell Carcinoma. *Urol Clinics North Am* 2000; 27.
4. Green LF, Yalowitz PA. The advisability of concomitant transurethral excision of vesical neoplasm and prostatic hyperplasia. *J Urol* 1972;107:445.
5. Tomera et al. Pyeloscopy in urothelial tumors. *J Urol* 1982;127:1088.
6. Klemeney LA, Witjes JA, Heijbroek RP, et al. Should random urothelial biopsies be taken from patients with primary superficial bladder cancer? A decision analysis. *Br J Urol* 1994;73:164.
7. Martinez-Pineiro, et al. Endourological treatment of upper tract urothelial carcinomas: Analysis of a series of 59 tumors. *J Urol* 1996;156:377.
8. See WA, Rahlf D, Crist S. In vitro particulated urines to fibronectin: correlation to in vivo particulated adherence to sites of bladder injury. *J Urol* 1992;147:1416.
9. Hyacinthe LM, Jarrett TW, Gordon CS, et al. Inhibition of bladder tumor cell implantation in cauterized urothelium, without inhibition of healing, by a fibronectin-related peptide (GRGDS). *Ann Surg Oncol* 1995;2:450.
10. Pawinski A, Sylvester R, Kurth KH, et al: A combine analysis of European Organization for Research and Treatment of Cancer and Medical Research Council randomized clinical trials for the prophylactic treatment of state TaT1 bladder cancer. *J Urol* 1996;156:1934-1941.