



Metastatic transitional cell carcinoma of the bladder in an ileal conduit stoma. A case report and literature review

Metástasis de carcinoma de células transicionales de vejiga a estoma del conducto ileal. Reporte de caso y revisión de la literatura

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Abstract

Clinical case presentation: An 80-year-old man was admitted to our emergency department due to fever and a progressively growing mass in the urinary diversion stoma, four months after radical cystectomy for muscle-invasive bladder cancer.

Surgical resection was done, and histopathologic examination revealed high-grade urothelial carcinoma metastasis. After nearly three years of follow-up, no signs of *recurrence have been seen*.

Relevance: Urothelial cancer at all stages can metastasize to other organs.

Hematogenous metastasis spreads to all organs, most frequently to the lungs, liver, or bone and lymphatic metastasis spreads to regional lymph nodes in the pelvis, or further, to the retroperitoneal lymph nodes. *Metastatic* bladder cancer in the *ileal conduit* stoma is unusual. Cancer recurrence after radical cystectomy has been reported in ureteroileal anastomoses.

Clinical implications: Surgical treatment is an option in those patients. Adjuvant radiotherapy and/or chemotherapy are possible alternatives in cases of more than one metastasis site. There are no clinical guidelines establishing correct management.

Conclusion: Urinary diversion stoma metastasis secondary to urothelial carcinoma is a rare entity. Direct implantation during the surgical act, or hematogenous, lymphatic, or mixed dissemination, could justify metastatic implantation.

Keywords:

Bladder cancer,
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Background

Bladder cancer heterogeneity is based on its different progression patterns and therapeutic response. Non-papillary tumors have the highest risk for progression to muscle-invasive bladder cancer and metastatic disease. Fifty percent of muscle-invasive bladder cancer (MIBC) develop recurrence after radical cystectomy and distant metastases are more frequent than local recurrence.⁽¹⁾ The most common sites for bladder cancer metastases are the lymph nodes, bones, lungs, liver, and peritoneum. Tumors with a more advanced T category and an atypical histologic pattern develop early metastases more frequently.⁽²⁾ The appearance of recurrence in the stoma of the urinary diversion, after radical cystectomy due to urothelial carcinoma, is an extremely rare entity, with very few cases described in the literature. We present herein a case of metastasis in the urinary diversion stoma secondary to transitional cell carcinoma.

Case Presentation

An 80-year-old man, with a personal history of type 2 diabetes and an ex-smoker, was diagnosed with muscle-invasive bladder carcinoma, pT2G3, and underwent open radical cystectomy and iliac-obturator lymphadenectomy, with a urinary diversion through ureteroileostomy, using the classic Bricker technique, in May 2017. The histologic pattern was high-grade infiltrating urothelial carcinoma, pT3bN0, with surgical margins, ureters, vas deferens, apex, and prostatic urethra free from neoplastic in-

filtration. There was no evidence of metastatic lymph node involvement, but images revealed lymphovascular and perineural invasion and an incidental adenocarcinoma of the prostate, Gleason 6 (3+3) pT1bN0M0. A previous abdominal computed tomography scan was negative for lymph node infiltration or distant metastatic disease.

Four months after surgery, the patient was admitted to the emergency room, presenting with fever and a 3 x 3.5 cm, exophytic, inflammatory, granulomatous parastomal lesion that progressed in size during admission (Fig. 1-2).

Figure 1. Superficial stomal lesion.



Fig. 1. The lesion appeared ulcerated and bloody, with irregular sites of bleeding.

Figure 2. Ileal conduit stoma mass.



Figure 2. Stoma lesion size increased within a short period of time.

An abdominal computed tomography scan also confirmed a previously undetected subcutaneous 2x3 cm collection, together with the presence of two pathologic lymph nodes in the right groin. CT urography was performed to evaluate the urinary tract, revealing no apparent lesions.

A biopsy of the lesion was indicated, and results were positive for poorly differentiated urothelial carcinoma. Surgical *en bloc* resection of the stoma and ileum affected by the tumor was performed, with curative intent. A single lymph node in the mesenteric tissue of the small intestine was also resected (Fig. 3).

Figure 3. Surgical specimen of bladder cancer metastasis.



Figure 3. Mass tumoral invasion of subcutaneous tissue and part of the ileal stoma. No portion of the ileum was compromised.

The stoma was reconstructed by advancing the ileum, using the Turnbull technique. The histopathologic exam of the surgical specimen and unique lymph node reported high-grade urothelial carcinoma metastasis, with lympho-vascular infiltration, and tumor-free surgical margins (Fig. 4).

Figure 4. Histologic exam of the surgical specimen



Figure 4. Hematoxylin and eosin-stained longitudinal section of the surgical specimen, with ileal conduit stoma tumor involvement. The left side of the image shows no tumor in that portion of the ileal conduit.

Finally, a biopsy of the groin nodes was performed, two of which were positive for urothelial carcinoma metastasis. The patient did not meet the criteria for chemotherapy because of comorbidity, and so he received treatment with external beam radiation therapy, with excellent tolerance. The patient is currently free of disease, after nearly three years of follow-up.

Discussion

Recurrence of urothelial tumors in the intestinal diversion after a radical cystectomy is uncommon and is the consequence of local or distant dissemination of the primary tumor. Published cases of recurrence or metastases in ileal conduits after radical cystectomy are rare.⁽³⁾ In such cases, concomitant recurrence in the upper urinary tract is sometimes found, with ureteroileal anastomosis as the most frequent location.⁽⁴⁾ Certain authors argue that this could be due to implantation or seeding during the surgical act, or after the self-implantation of tumor cells from the upper urinary tract.⁽⁵⁾ Other studies highlight the multifocal nature of urothelial tumors and their intrinsic tendency to recur. Therefore, the origin of recurrence in the ileal conduit and stoma is likely urothelial tumor recurrence at the level of the distal ureter, growing from the ureteroileal anastomosis and subsequently invading the reservoir.⁽⁶⁾ Another study found that a distal ureteral tumor was an independent risk factor for the development of MIBC and radical cystectomy.⁽⁷⁾

In 1974, Grabstald described the first case of tumor surrounding the ileal stoma 4 years after a radical cystectomy, assigning the direct implantation of tumor cells during surgery as the probable cause. It was treated with surgical resection, and before performing the urinary diversion, the skin was thoroughly washed and the instruments were replaced.⁽⁸⁾ Gupta published a case of squamous cell bladder carcinoma with metastasis to the stoma but with no involvement of the ureteroileal anastomosis, also attributing the implantation of tumor cells during cystectomy as a possible cause. Chemotherapy was the proposed treatment.⁽⁹⁾ Takubi presented a case of bladder adenocarcinoma

recurrence in an ileal stoma 7 months after radical cystectomy, in a patient with previous systemic metastases. Said recurrence was probably due to hematogenous dissemination, as there was no evidence of tumor in the upper urinary tract or in the ileal conduit.⁽¹⁰⁾

To the best of our knowledge, ours is the second case of metastatic urothelial carcinoma in the ileal conduit to be published. The disease emerged early, just 4 months after surgery, possibly due to lymphatic dissemination. There was important lymphovascular compromise (an ileal duct lymph node and right inguinal lymph nodes were positive for malignancy), which was a determining factor for the development of metastasis, as well as an independent predictor of specific and total cancer survival. There was no involvement of the upper urinary tract, ureteroileal anastomosis, or systemic metastasis, and the surgical margins were tumor-free.⁽¹¹⁾

Conclusion

Urinary diversion stoma metastasis secondary to urothelial carcinoma is a rare entity. Direct implantation during the surgical act, or hematogenous, lymphatic, or mixed dissemination, could justify the metastatic implantation. Surgical management can be a first approach, with chemotherapy and/or radiotherapy, as possible alternatives in other types of metastases.

Conflict of interest

None declared.

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