

# Sarcomatoid bladder carcinoma: A rare metastatic disease of small bowel

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## ABSTRACT

**Introduction:** Small bowel obstruction secondary to metastatic disease is a rare presentation with most current evidence being limited to case reports. Previous evidence described breast, lung and melanoma as the most common underlying primaries presenting with this entity. Bladder carcinoma rarely metastasizes to the gastrointestinal tract, and if present, does not typically cause small bowel obstruction. **Case Report:** A 62-year-old female with a history of sarcomatoid bladder carcinoma that had been managed initially by transurethral endoscopic resections and subsequently by a radical cystectomy presented a year later with small bowel obstruction. Extensive work-up for the source of the obstruction was inconclusive and after failed conservative management, the patient underwent an exploratory laparotomy. At laparotomy, she was found to have a small bowel intussusception secondary to a tumor. The small bowel resection specimen was later identified as a sarcomatoid carcinoma, resembling the previously resected bladder tumor. **Conclusion:** We present a rare case of a

patient presenting with small bowel obstruction secondary to metastatic disease from a variant of bladder cancer—the sarcomatoid bladder carcinoma.

**Keywords:** Metastatic bladder carcinoma, Bowel obstruction

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## INTRODUCTION

Metastatic disease to the intestine is common although the incidence can vary significantly depending on the primary tumor type [1]. However, small bowel metastasis rarely present with obstruction, with only 56 cases being reported up to 2012. The most common primary sites include breast, lung, renal and ovarian cancer [1]. Even less common is the presentation of intestinal obstruction secondary to metastasis from a bladder cancer primary, which has only been reported once in English literature, the previous case being a large bowel obstruction [2]. Here we present a rare case of small bowel obstruction secondary to a small bowel metastasis from a bladder primary.

## CASE REPORT

A 62-year-old Caucasian female was admitted with colicky abdominal pain and vomiting. The patient's previous history was significant for sarcomatoid

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transitional cell carcinoma of the bladder for which she had undergone multiple local endoscopic resections but subsequently had a radical cystectomy with ileal conduit formation for muscle invasive (pT2) disease. Following surgery, the final cystectomy specimen showed no residual tumor. She did not receive adjuvant chemoradiotherapy.

Upon admission, her abdominal pain was initially managed conservatively. Her symptoms subsequently resolved within 48 hours and she was discharged home. However, she again presented four days later with further abdominal pain and vomiting. An abdominal computed tomography (CT) scan demonstrated mildly dilated small bowel loops but no obstructing lesion. Her symptoms were attributed to adhesions and once again managed conservatively with subsequent discharge home.

Approximately three weeks later, she presented again for a third time with obstructive bowel symptoms. X-ray showed a normal gas pattern although on this occasion her inflammatory markers were mildly elevated. Upper GI endoscopy only revealed a non-occlusive benign duodenal polyp while contrast small bowel studies and an oral and rectal contrast-enhanced CT scan demonstrated prominent small bowel loops without an obstructing lesion.

With her symptoms becoming protracted, a decision was made to proceed with laparotomy. At the time of surgery, the small bowel obstruction was found to be due to a small bowel intussusception with a jejunal tumor as the lead point. A small bowel resection was therefore performed with a primary end-to-end anastomosis. The patient made a steady postoperative recovery and was eventually discharged home one week later.

Histology of the resected jejunal tumor revealed a six-cm submucosal nodule with spindle cell areas and occasional multinucleated cells. Immunohistochemistry of the tumor showed presence of vimentin, a feature of sarcomatoid malignancy. These findings correlated with the resected bladder carcinoma, confirming it as a metastatic tumor.

On most recent follow-up (one month after surgery), the patient was found to have extensive brain and liver metastases deeming her with a poor prognosis.

## DISCUSSION

Bladder cancer is the fifth most common cancer worldwide with a reported incidence of 104,400 in the European Union in 2006 and 68,810 cases documented in the United States in 2008. In the industrialized countries, more than 90% bladder cancers are transitional cell carcinomas, while in the the developing countries, 75% are squamous cell carcinomas. Sarcomatoid bladder carcinoma is a rare form of bladder cancer, with an incidence of 0.31% [3].

Sarcomatoid carcinomas are biphasic tumors that by definition contain an epithelial component adjacent to a mesenchymal component. The first detailed report of

sarcomatoid carcinoma of the urinary bladder was described in an article by Robson et al. in 1935 [4]. Histologically, sarcomatoid carcinomas contain spindle-shaped cells with abundant eosinophilic cytoplasm and atypical, bizarre, hyperchromatic nuclei within the stroma (Figure 1) [5]. Although the behaviour of sarcomatoid carcinomas is still under scrutiny due to their rarity, it is well known that they usually present with a high degree of malignancy [5], and have presented with metastatic disease even in non-muscle invasive (T1) primaries [3].

Bladder carcinomas, as with most tumors of the genitourinary system most frequently spreads to lymph nodes (59%), liver (47%), lungs (45%) and bones (32%).

Reported cases of bladder metastases to the small bowels are rare [6–8], with none described in current English literature. Interestingly, the converse, i.e. metastatic spread of small bowel tumors to the bladder, causing urological symptoms is equally uncommon with only one reported case in current literature [9].

Small bowel obstruction is a rare presentation of metastatic disease, with most current evidence limited to case reports [1]. Published evidence suggests that breast cancer is by far the most common distant primary site causing with small bowel obstruction, secondary to isolated metastases to the bowel wall (47% cases) [1]. The next most common primaries causing small bowel obstruction are lungs (8%) and malignant melanoma (11%). Most case reports have described the mechanism of bowel obstruction in these patients as being related to intussusception, with the metastatic tumor being the lead point. To our knowledge, this is the first case reported in English literature of bladder metastasis to the small bowel causing intussusception and bowel obstruction. The only other similar case caused large bowel obstruction [2].

The diagnosis of small bowel obstruction due to metastatic disease poses a significant challenge. As our case demonstrated, the rarity of the condition caused by bladder metastases lead to a low index of suspicion, plus the presenting symptoms can often be non-specific in nature and as a result the diagnosis may be significantly delayed.

Our patient developed metastatic disease, despite seemingly successful aggressive treatment of her bladder cancer with no evidence of residual tumor in the final bladder specimen on histology. This once again

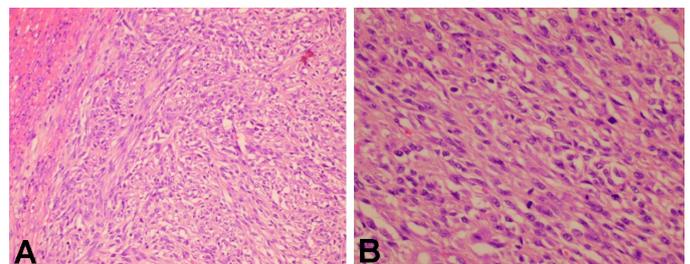


Figure 1: Histological sections of (A) resected bladder carcinoma (H&E, x200), (B) and resected small bowel tumor (H&E, x200). Similarities in features between the two sections include spindle celled areas and occasional multinucleated cells, consistent with sarcomatoid carcinoma.

highlights the aggressive nature of sarcomatoid carcinomas. The presence of this rare but aggressive form of bladder cancer as a primary should, therefore, raise the index of suspicion of subsequent metastatic sequelae, particularly in cases with a clinical picture suggestive of bowel obstruction.

## CONCLUSION

Bowel obstruction due to metastasis from bladder cancer is an extremely rare entity. In the presence of a history of sarcomatoid bladder primary, the possibility of small bowel metastatic disease should be considered in patients who present with bowel obstruction.

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## Author Contributions

Tafadzwa Makarawo – Substantial contributions to conception and design, acquisition of data, Drafting the article, Revising it critically for important intellectual content, Final approval of the version to be published

Joshua Phillips – Substantial contributions to conception and design, Drafting the article, Final approval of the version to be published

Jonathon Eaton – Substantial contributions to conception and design, Acquisition of data, Drafting the article, Revising it critically for important intellectual content, Final approval of the version to be published

George Kondratowicz – Substantial contributions to conception and design, Acquisition of data, Drafting the article, revising it critically for important intellectual content, Final approval of the version to be published

## Guarantor

The corresponding author is the guarantor of submission.

## Conflict of Interest

Authors declare no conflict of interest.

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