Journal of Medical Clinical Case Reports

# Metastasis of Breast Carcinoma in the Urinary Bladder Wall

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Submitted : 4 Dec 2024 ; Published : 17 Dec 2024

**Citation:** Zorka Inić. et al., (2024). Metastasis of Breast Carcinoma in the Urinary Bladder Wall. J Medical Case Repo, 6(4):1-5.
DOI : https://doi.org/10.47485/2767-5416.1094

**Abstract**

*When we think about the sites of metastasis of breast cancer, in addition to lymphatic nodes in the axilary region, we first examine: bones, lungs, liver, brain, but we never think about the possibility that metastasis of breast carcinoma can be in the bladder wall.*

*We report a case of urinary bladder metastasis from a primary breast cancer, the 58-years-old female patient who had hematuria and bilateral hydronephrosis. The prognosis of this rare disease is poor and similar like any MBC and average survival is 18 to 30 months.*

## Introduction

When we see the patient with urinary symptoms which has first breast cancer we need to think about possibility that patient maybe has metastasis of breast carcinoma in the bladder wall. It is very rare disease in Serbia and any part of the Word.

## Case presentation

We describe the case 58-years-old female patient who was diagnoses with de novo metastatic breast cancer in urinary bladder. She was presented with urinary symptoms and bilateral hydronephrosis.

Three years ago her initial diagnosis was triple-negative breast cancer, initially staged as T4b N3 MO.

The patient then underwent neoadjuvant chemotherapy (NCT), with anthracyclines and taxanes and radical radiation therapy of the breast and regional lymphatics was performed. After that she had Madden modified radical mastectomy.

The histopathological examination showed in the macroscopically described area, the stroma is mostly fibrously altered, in one section necrotic, and in one section edematous with numerous histiocytes, in which rare individual tumor cells and a microscopic focus of tumor cells (less than 1 mm) can be observed. Histopathological assessment of tumor response to therapy: almost complete response (pNCR). Receptors: ER sc.0, PR sc.0, HER-2:1+, Ki67: on the series of sections, the tumor cells are lost, so the proliferative factor cannot be determined.

Extensive lymphovascular invasion was noted along perinodal involvement, with 2 out of 10 removed lymph nodes tested positive for metastasis.

The treatment was continued with Capecitabine in an adjuvant approach (8 cycles).

Furthermore, on the regime of regular controls, she was followed up on every six months and the disease was asymptomatic for next two years.

After that she was hospitalized at the UKCS Urology Clinic with a clinical picture of urosepsis, in the field of bilateral coralliform calculus of the kidneys and PCN was placed on the left. During the same hospitalization, a CT scan of the abdomen and pelvis was performed, which also verified retroperitoneal lymphadenopathy. Then she had cystoscopy and placement of a JJ stent on the right, and a verified zone of bullous edema on the back wall and around the right orifice.

Diagnostically processed, TUR of the urinary bladder was performed with extraction right JJ stentis and CT findings of the abdomen and pelvis showed and retroperitoneal lymphadenopathy.

After discharge from the hospital, a control examination by a urologist was performed along with an EHO examination of the abdomen showed right kidney with calculus and track gr. 1, the left kidney is thinner, edematously enlarged with an incipient path.

The histopathological examination showed infiltratory carcinoma of the urinary bladder wall. Urinary bladder carcinomatous lympangiosis.

Immunohistochemical staining: GATA3, GCDFP-15, CDX2, Mamaglobin (Figure 1-5.).

It was concluded that it is a metastasis of breast carcinoma in the bladder wall.

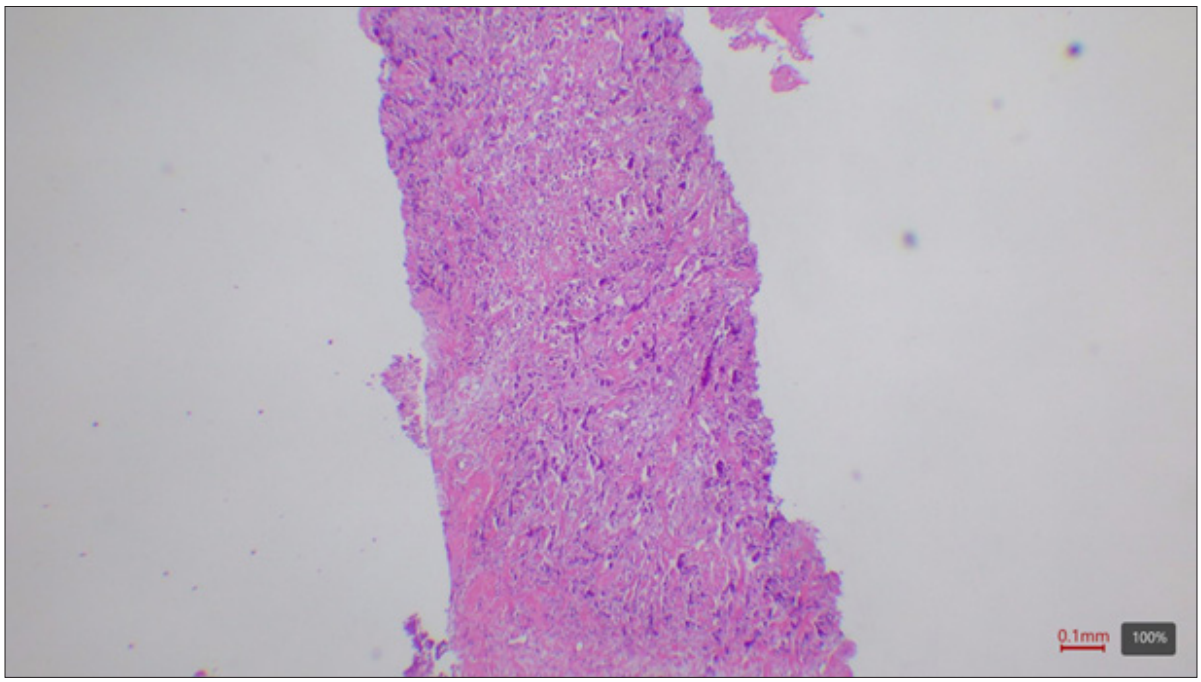


**Figure 1:** Breast carcinoma, H&E 4x.

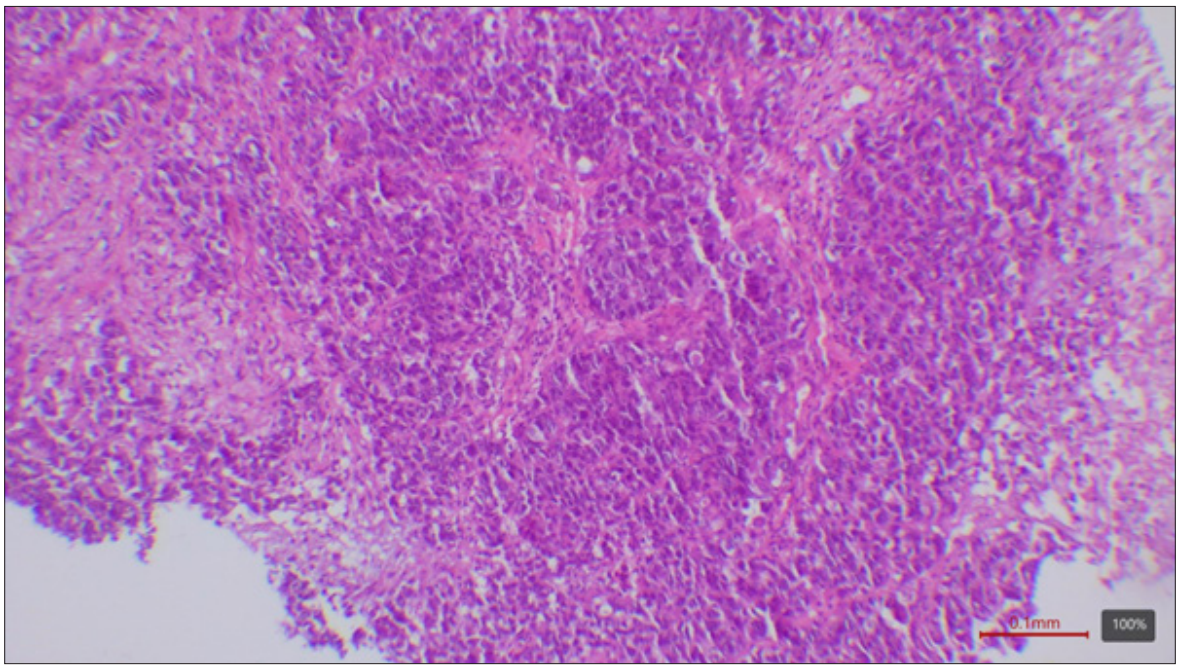


**Figure 2:** Breast carcinoma, H&E 10X.

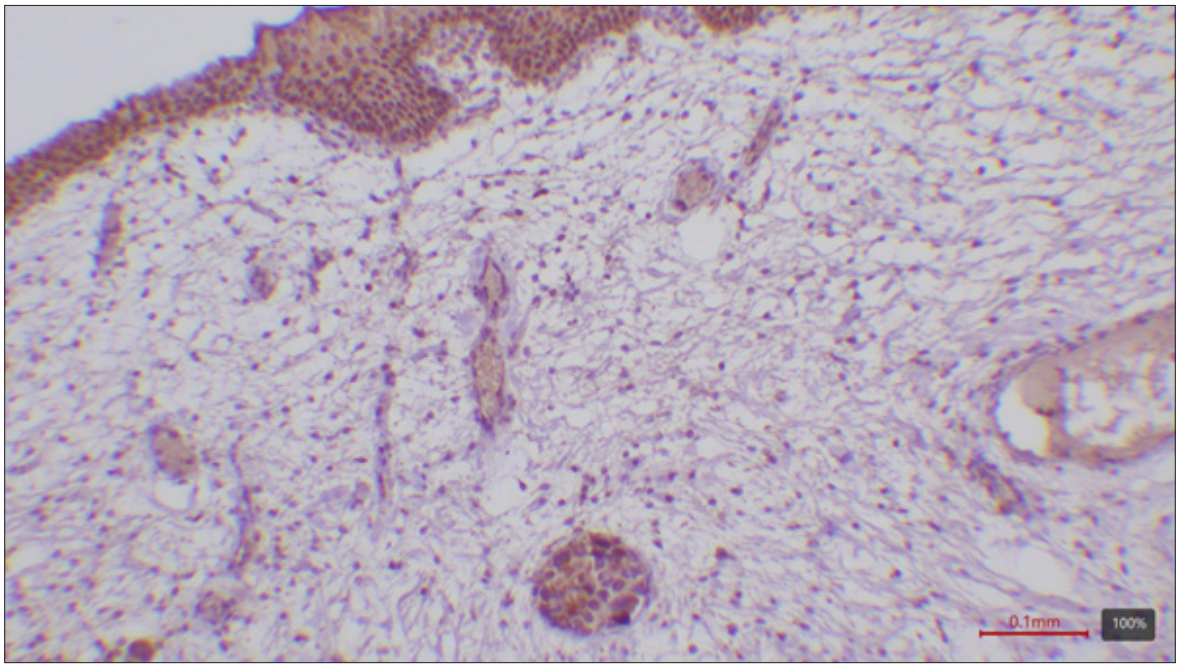


**Figure 3:** GATA3, 10x. GATA3 positivity in urothelial epithelium and negativity of tumour cells for GATA3.

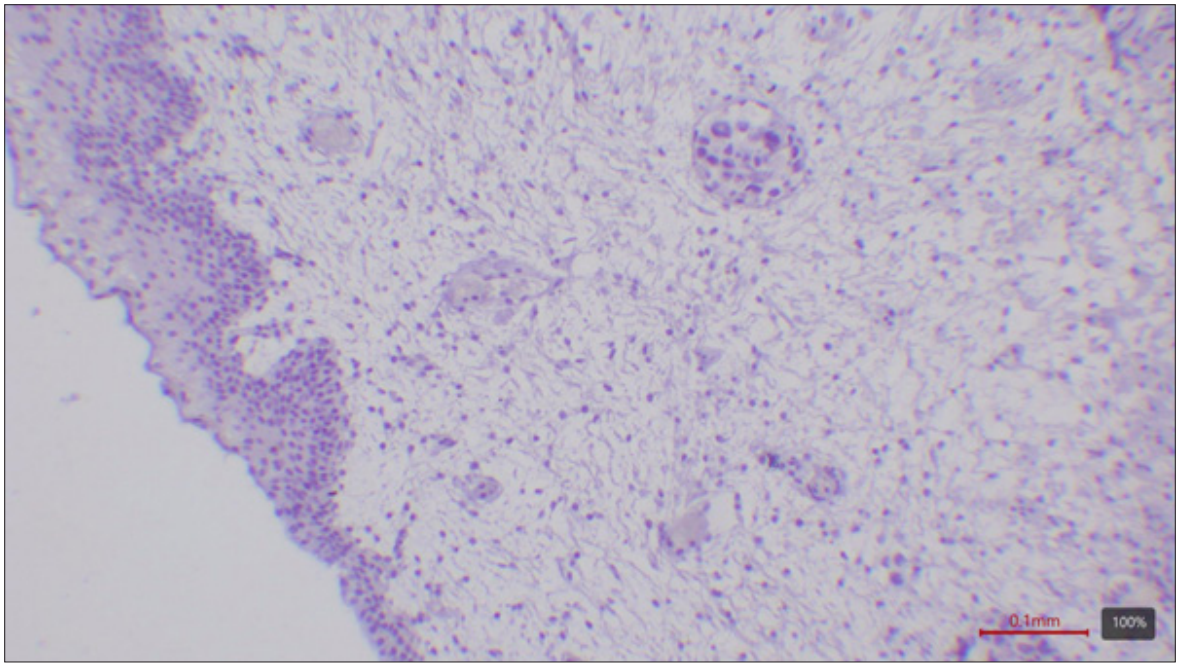


**Figure 4:** GCDFP-15, 10X. Tumour cells are negative for GCDFP-15.

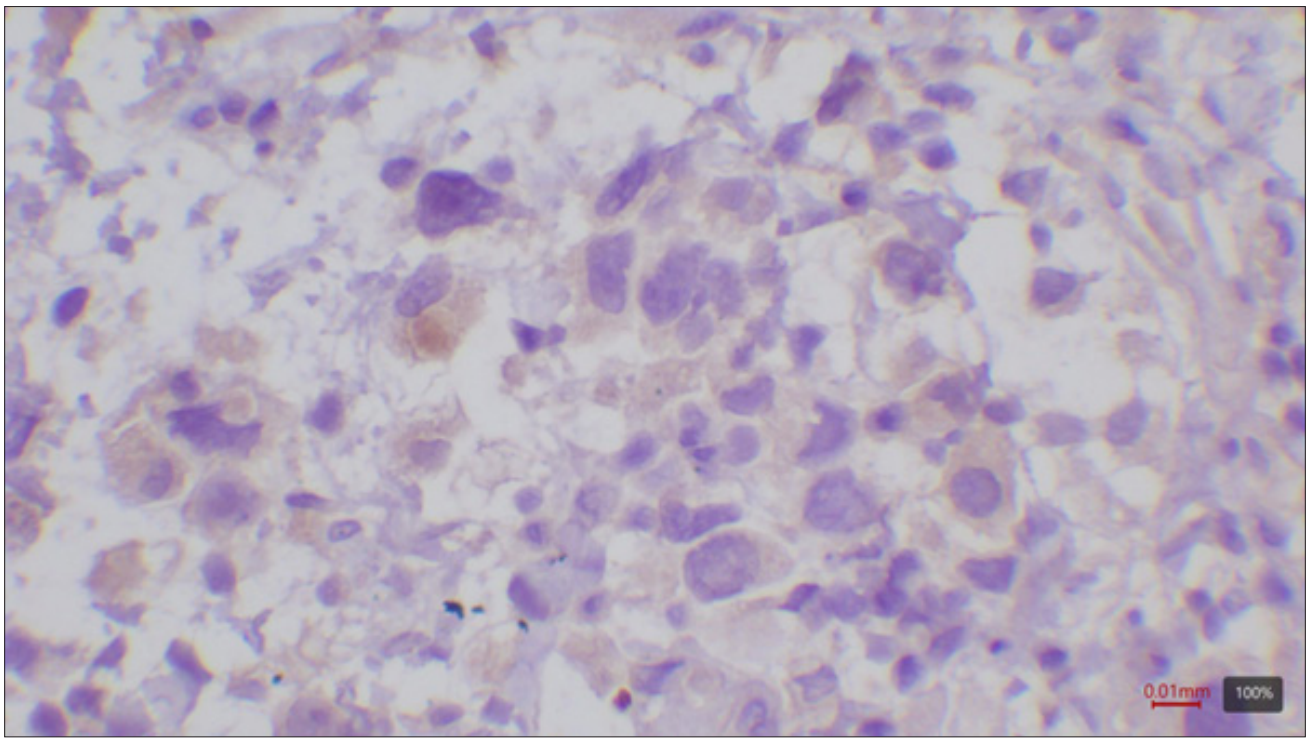


**Figure 5:** Mammaglobin, 40x. Single tumour cells positivity for Mammaglobin.

## Discussion

Breast cancer metastasis accounts for the majority of deaths from breast cancer. Detection of breast cancer metastasis at the earliest stage is important for the management and prediction of breast cancer progression (1,2). Despite advances in breast cancer screening, diagnosis, and treatment, nearly 12% of patients with a diagnosis of breast cancer eventually develop metastatic disease. Metastatic breast cancer is associated with a poor prognosis with the 5-year survival rate is 26% (3). The most common sites of metastasis of breast cancer in addition to lymphatic nodes in the axilary region are: bones (60-75%), lungs (32-37%), liver (32-35%), brain (up to 10%) (4).

Secondary tumours of the urinary bladder are rare and the majority of them are due to the direct extension of another pelvic neoplasm - colorectal or cervical (5). Metastases of breast cancer in bladder are rare and isolated cases have been reported in the literature. Only 54 cases of metastasis of breast cancer to the bladder have been described in the literature, of which a large number were detected on autopsies. Most cases are diagnosed after the diagnosis of primary breast cancer and are usually associated with other metastatic sites (6). Lobular breast cancer is more likely to metastasize to the bladder than ductal carcinoma (7). The largest number of patients (over 40%) present with hematuria. In addition to hematuria, frequent urination, urgency, dysuria, urinary incontinence and nocturia are also common symptoms (8).

The diagnosis is made by radiological examinations, starting with US, CT, MRI and PET examinations. In addition, during the monitoring of breast cancer itself, it is important to monitor the tumour marker CA15-3. When the imaging method is a verified change in the bladder area, the definitive diagnosis is made by cystoscopy examination and biopsy (6,9).The disease is identified by cystoscopy and resection can be aid.

The standard treatment for these cases is chemotherapy with hormone therapy. Radiotherapy can be used to control bleeding from the bladder. While in the case of obstructive uropathy, it is necessary to perform percutaneous drainage of the urinary system in order to preserve renal function before starting systemic therapy (10).

Generally, the prognosis of these patients is poor and similar like any MBC and average survival is 18 to 30 months (11). The 5-year survival is only 2%, unless bladder metastases represent the only metastatic site (6).

## Conclusion

We report a case of urinary bladder metastasis from a primary breast cancer which has hematuria and bilateral hydronephrosis. Urgent collaboration between urologist and pathologist is recommended and after that prompt therapy. Prognosis is usually poor and further researches are needed to be done in future.

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