

# Intradiverticular Bladder Carcinoma-A Rare Case Report

AESHITA SINGH, PAWAN KUMAR GUPTA, MUKUL SHRIVASTAV

## ABSTRACT

The most common intradiverticular malignancy is urothelial cancer. Bladder diverticula can be caused either by congenital or acquired defects which results in out pouching of the bladder wall. Intradiverticular urothelial lining is more predisposed to bladder carcinoma as compared to the anatomically normal urinary bladder wall. Acquired diverticula are by far more common and are secondary to lower urinary tract obstruction, such as benign prostatic hyperplasia, vesical neck contracture, urethral stricture or neurogenic bladder. Due to its rarity, intradiverticular carcinoma is

not so frequently encountered in general practice. Most malignant tumours in vesical diverticula are of transitional type (about 78% of total cases), followed by squamous cell carcinoma (17%), a combination of transitional and squamous cell types (2%) and rest are adenocarcinoma (2%). Diagnosis of vesical diverticula follows ultrasound, radiologic examination (intravenous pyelography and/or cystography) and cystoscopy. In cases of diverticula with narrowed openings, a tumour in a diverticulum may be overlooked. In these cases, CT, transvesical and transrectal ultrasound is of great importance for detection of an intradiverticular tumour.

## CASE REPORT

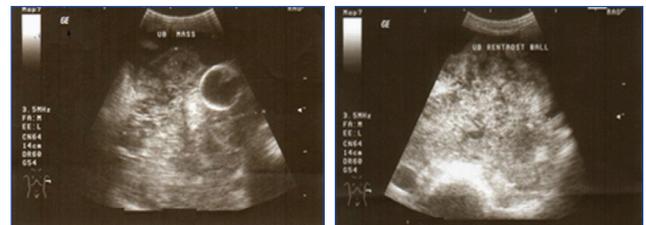
A 80-year-old female patient came to our hospital with complaint of abdominal pain, painless macro haematuria and occasional vomiting since last two months. Patients consent was taken. Pathological investigations showed raised serum creatinine-3.5 mg/dL and serum urea was 35 mg/dL. Patient was a known case of hypertension since last 30 years and she was on antihypertensive drugs. There were no other relevant genitourinary complaints except macro hematuria and there was no history of cancer or malignancy.

ECG and 2D Echo was also performed since she had chest pain and shortness of breath, LV dysfunction and 20% EF was diagnosed. Earlier patient was on regular dialysis because of renal parenchymal disease.

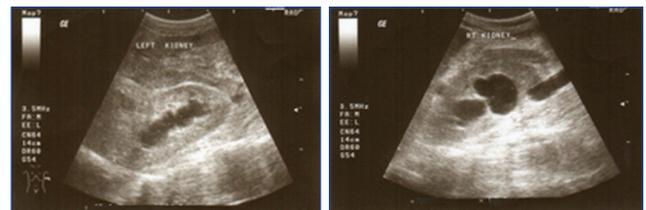
USG performed the same day showed a large, irregular lobulated mass lesion in the urinary bladder and a rent in posterior wall of the bladder, the mass lesion was extending upto the diverticulum [Table/Fig-1a,b]. Color flow and spectral Doppler analysis demonstrated blood flow within the mass both kidneys showed dilated pelvicalyceal system [Table/Fig-1c,d].

CT abdomen was done in which there was 8.5 cm rent in posterior wall of urinary bladder associated with large,

**Keywords:** Color flow, Detection, Diverticula, Malignancy

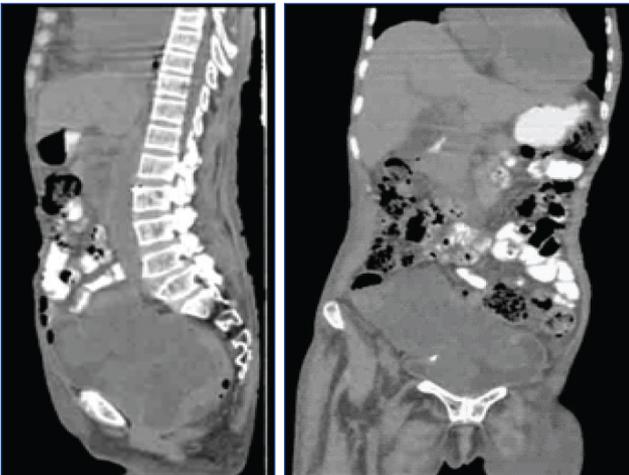


[Table/Fig-1a,b]: Gray scale USG image shows the large irregular lobulated mass lesion within intravesical posterior wall diverticulum.

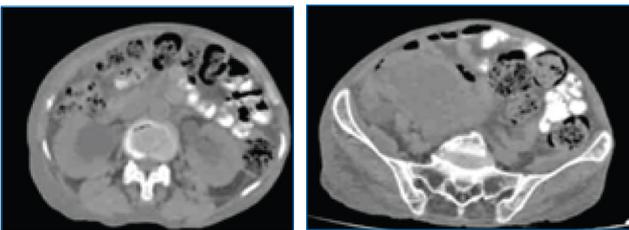


[Table/Fig-1c,d]: USG images showing bilateral hydronephrosis.

irregular, ill defined multilobulated soft tissue mass lesion measuring 15x12x11 cm approximately in pelvic cavity and bladder lumen extending right iliac fossa causing mass effect on uterus as its posterior displacement [Table/Fig-2a-c]. However, intervening fat plane was preserved. There was dilatation of bilateral ureters and pelvicalyceal system, mass effect was also detected in ileal loops and recto-sigmoid



**[Table/Fig-2a,b]:** CT sagittal and coronal image showing large, irregular, ill defined multilobulated soft tissue mass lesion within urinary bladder diverticulum and causing mass effect on uterus as its posterior displacement, no significant retroperitoneal lymphadenopathy or intraperitoneal free fluid seen.



**[Table/Fig-3a,b]:** Showing bilateral hydronephrosis, mass effect was also detected in ileal loops and recto-sigmoid.

[Table/Fig-3a,b].

No significant retroperitoneal lymphadenopathy or intraperitoneal free fluid was noted. Cystoscopy and biopsy was planned after patient was stabilised under general anaesthesia. Pre-operatively cystoscopy and transurethral resection of bladder mass done for Histopathological Examination (HPE). Histology was done and it showed mucinous adenocarcinoma. CA 125 was performed, it was 118 kU/L, chemotherapy could not be started since renal functions of patient were deranged. Although, later on bilateral percutaneous nephrolithotomy was performed.

## DISCUSSION

The urinary bladder is the most frequent site for urinary tract carcinomas. Transitional cell carcinoma constitutes more than 95% of primary bladder cancers. Squamous cell carcinoma and adenocarcinoma account for a minority of epithelial tumours, mesenchymal neoplasms are rare [1]. Vesical diverticula are congenital or acquired. Acquired diverticula are by far more common and are secondary to lower urinary tract obstruction, such as benign prostatic hyperplasia, vesical neck contracture, urethral stricture or neurogenic bladder. Cross-sectional imaging may demonstrate a bladder mass or focal wall thickening. Cross-sectional imaging is also an

important tool for detecting intradiverticular masses. Cancer of the urinary bladder is predominantly a disease of older men. This disease represents 6% of all malignancies in men, making it the fourth most common tumour. In women, bladder carcinoma represents 2% of malignancies, making it the seventh most common tumour [2].

Ultrasonography allows detailed visualization of the bladder. In addition to ultrasonography, color Doppler helps in determining the vascularity within a lesion [3]. But sonography is not routinely used for staging cancer of the urinary bladder. If the tumour is found incidentally, it often appears as a polypoid or plaque like, hypoechoic lesion that may project into the bladder [4].

CT is the primary imaging modality for cancer of the urinary bladder. Optimally, rapid scanning is performed in the nephrographic phase before excreted IV contrast material reaches the bladder.

Thus, the enhancing tumour can be visualised against a background of low attenuation urine within the bladder. On delayed scanning, the lesion appears as a mural nodule against a background of high attenuation contrast material within the bladder. The mass may appear plaque like or papillary. Calcifications may also be noted [5].

Apart from the adequate visualisation of the bladder, CT also allows recognition of vesical, ureteral and renal synchronous lesions, as well as it also provides information about the local spread of urinary bladder carcinoma, lymphatic spread and metastasis [6].

Cystoscopy and biopsy of the lesion is most important tool with which the final diagnosis of bladder cancer is usually established with. Apart from cystoscopy, imaging studies are an indispensable adjunct in the diagnosis, staging and management of bladder cancer [7].

The prognosis is most influenced by the histologic grade at diagnosis. Staging also affects the prognosis of intradiverticular bladder carcinoma, as vast majority of patients who develop metastases have concomitant or prior muscle layer invasion [8].

Recent studies suggest that complete resection with careful follow-up may be successful in the treatment of intradiverticular cancers [9].

The main differential diagnoses include high grade urothelial carcinoma, lymphoma and sarcoma. Additionally, metastatic small cell carcinoma should also be ruled out based on clinical information and histopathological examination.

The prognosis of intradiverticular bladder carcinoma is always considered poorer than urinary bladder carcinoma, it is influenced mainly by staging and histopathological diagnosis.

Diverticulectomy is a safe and effective procedure for the treatment of intra diverticular bladder carcinoma. Treatment

modalities include tumour resection followed by adjuvant intravesical chemotherapy or BCG immunotherapy to diverticulectomy or partial cystectomy and finally radical cystectomy for high grade tumours [10].

## CONCLUSION

The purpose of our study is to describe the role of imaging modalities like ultrasonography and computed tomography in assessment of intradiverticular bladder cancer and evaluate if imaging findings can predict the clinical outcome.

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