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# Spontaneous Intraperitoneal Rupture of Urinary Bladder, in a Papillary Cell Urothelialcarcinoma of Urinary Bladder - A Rare Case Presentation; Detection with Ultrasound Makes it Even Rarer

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**Abstract:**

Spontaneous intraperitoneal rupture of bladder is a rare entity, that too with the advancement of the pre-existing tumour is quite pathetic. The lethal involvement can develop either with the advancement of existing pathology or due to the damage extended to the bladder wall following treatment mode with chemo-radiations. Since constant instillation of saline into the bladder lumen for flush off the clots and other tissue debris, to avoid blockage of urine transition through the catheter. Regarding the diagnostic point of view earlier it was quite firmly ascertained with CT Plain Cystography and Contrast CT scan. Later it was super seeded with contrast cystography. But here we are documenting the case which was diagnosed with the aid of USG and Plain CT.

Reported cases of spontaneous intraperitoneal rupture of urinary bladder following advanced urothelial carcinoma is extremely rare, over and above diagnostic aid with the Ultrasound to find or make a diagnosis is hardly reported. Manning with the available modalities to conclude such a rare incident was helped the Urologist tackle the menace without much complications as they were anticipated.

**Keywords:** differential, spontaneous, intraperitoneal and urinary bladder neoplasms

Spontaneous intraperitoneal rupture of the urinary bladder is a rare phenomenon. The manifestation of the disease depends on the chronicity of the bladder tumour and also related to treatment modalities implicated, of which radiation carries considerable risk. Over and above repeated instrumentations and flushing off the bladder with saline jets also provoked the existing dangerous condition to strike with double force.

## Case report

An elderly man presented with haematuria of a week duration and was on Foley's catheter. He had previously undergone surgery for bladder tumour, at the trigone and posterior wall. As a part of part of ongoing therapeutic regimen he was subjected to chemotherapy and radiation.

Histopathology report came as papillary Urothelial carcinoma ISUP Grade I. Minimal amount of abdominal guarding noted and his temperature was slightly at a higher level. He was moderately built and nourished. His WBC blood counts were elevated 14000cells/mL. S. Creatinine was elevated 2mg/dL.

## Radiological Assessment and Evaluation

USG showed a mildly distended urinary bladder with asymmetric thickened wall. Turbid and soft tissue components are in the lumen.Foley's catheter was in situ. A defect was been noted in the upper right lateral wall of urinary bladder, more precisely at the junction of bladder dome and the right upper lateral wall. A wedge shaped defect of 14mm was noted and it's wall was shaggy or obviously unhealthy. Hypoechoic linear anechoic lesion having tangentially acquainted striations detected and it was propagating towards the peritoneal cavity. It was traced up to right hypochondrial region. Longitudinal stretch of the lesion was 17cm and it's widest dimension 6.5cm. No floating debris noted in the collection. Retroperitoneal spaces are free. Chronic kidney changes are observed in both sides. No hydronephrosis or any hydroureterosis noted (**Figure 1**).

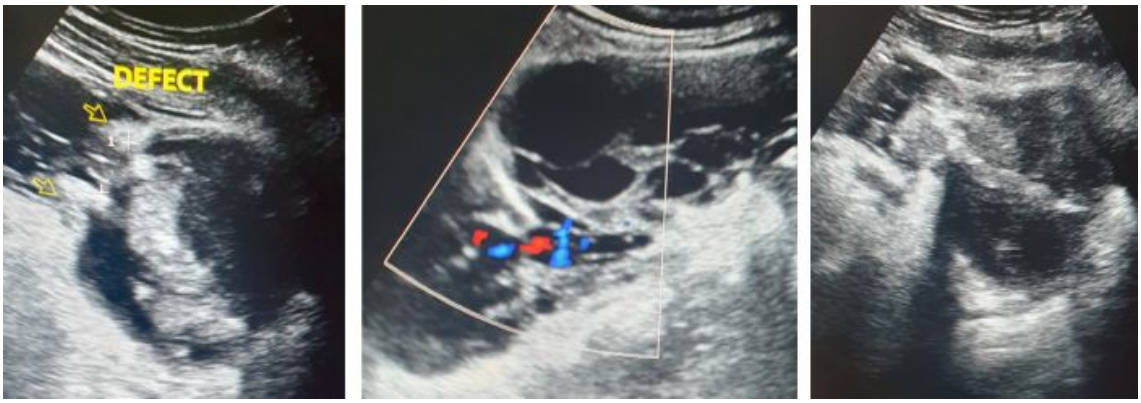


**Figure 1**

Plain CT showed a defect in the upper lateral wall of urinary bladder, a wedge shaped defect rather separation of 14.8mm,with shaggy margins. Soft tissue components, rather debris noted in the lumen. Foley's bulb was in situ. Through the defect multiple ill-defined fluid pockets with air trappings had been propagating into the peritoneal cavity, loculated in between the bowels and also in the right paracolic gutter space. No overt peritoneal reaction detected, mild mesenteric fat standings was obvious. No obvious residual or recurrent tumour mass detected in the bladder (**Figure 2**).

Cystoscopy showed a defect in the right upper lateral wall of urinary bladder; debris and blood clots are in lumen. Repeated chemotherapy and radiation broadened maximum brunt to the bladder wall in addition to the disease. The disease process could have curbed but the damage inflicted due to the regime, generated greater hurt, where the muscle wall was in ruggard condition. The dragging scenario was evident where the defect had developed away from the tumour site or the surgically intervened site. Constant target-oriented therapy, mostly the radiation would have been the second offender, primer is always the tumour.

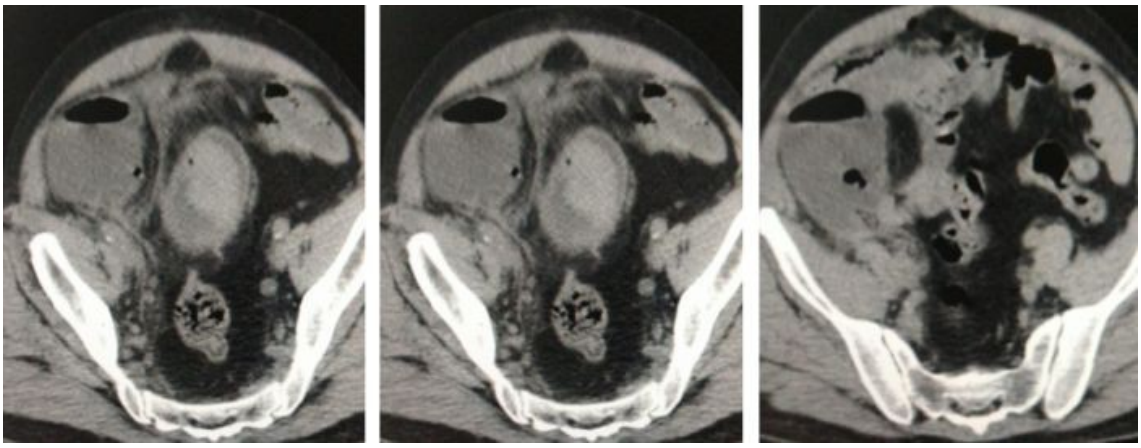

**Figure 2**

## Discussion

Spontaneous intraperitoneal bladder perforation is a very rare clinical event and is associated with high mortality. Most spontaneous bladder ruptures occur as the result of long-term indwelling catheters, radiation, chronic cystitis, bladder distention due to infravesical obstruction, or neurogenic bladder dysfunction [1]. However, bladder perforation associated with bladder cancer is an extremely rare cause of spontaneous rupture [2,3].

Such rupture is a surgical emergency that may be rapidly fatal if it's diagnosis and treatment is delayed or missed. Patients usually present with symptoms such as sudden onset of lower abdominal pain, high spiking fever, hematuria, abdominal distention with signs of peritoneal irritation, and anuria with biochemical features of acute renal failure due to auto-dialysis of urinary ascites across the peritoneum.

Intraperitoneal perforation is traditionally diagnosed by plain film cystography or cystoscopy. With the advent of modern imaging modalities, plain cystography is being replaced by contrast cryptography and MDCT.

None of the journals described the role of USG for diagnosing a spontaneous intraperitoneal bladder rupture that due to the consequences chartered out from an intrinsic malignancy of bladder wall.

In our case the patient had bladder tumour multiple synchronous bladder lesions proved to be papillary cell Urothelial carcinoma, ISUP GRADE I. Tumour was harbouring at trigone and posterior wall, it had been adequately contained with the surgery, chemotherapy and radiations.

Surprisingly, the history of the disease of a shorter duration, since it was professionally managed at the time of presentation itself and it never attained chronicity.

Procedures including instrumentations and radiations, choked the bladder beyond a point. That was enough to yield the wall, resulting an intraperitoneal rupture (even though it was of shorter duration of presentation) with an ascending urinoma.

With the available modalities like USG and Plain CT would able to come across the diagnosis. What prevented us from doing a contrast cystography was the creatinine level, it was at a greater heights (2mg/dl).

Contrast cystography is the modality of choice or the investigation of choice. But with the widespread use of CT cystography, this imaging technique is increasingly performed as an alternate method of diagnosing bladder rupture and has been shown to be as accurate as conventional cystography [4]. CT cystography can also distinguish the specific type of bladder rupture between extraperitoneal or intraperitoneal [5]. CT cystography has several advantages over plain film cystography: (1) it is rapid and is easily performed at the same time as other CT studies, (2) it is less affected by overlying bone fragments, and (3) it is more sensitive to the detection of small amounts of intraperitoneal or intraperitoneal fluid.

**In summary**

Here what we dealt with a case of spontaneous intraperitoneal bladder perforation in a treated or overtly managed highly aggressive Papillary cell urothelial carcinoma of urinary bladder. Imaging modalities helped to clinch the diagnosis was USG and plain CT. That stands very high and tumid, since the circumstatial dealing with the condition. Proper and timely interventions were carried out, like putting supra pubic catheter and intraperitoneal drainage of the urinoma and judiciously supporting with antibiotics. Another intervention to close the defect in an already ruggard wall is virtually unassailable subject to his present situation. The patient had been dramatically improved with this regimen without dreaming for anything courageous from the Urologists point of view, unless he is ready and fit enough to undergo total cystectomy.

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