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General Surgery

A RARE CASE OF SPONTANEOUS INTRAPERITONEAL RUPTURE OF BLADDER ASSOCIATED WITH VESICAL CALCULUS AND SQUAMOUS CELL CANCER OF THE BLADDER .

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KEYWORDS :

INTRODUCTION

Spontaneous bladder rupture (SBR) is defined as the presence of rupture without any antecedent trauma The exact incidence is unknown; however, the reported incidence has been as low as 1:126000 hospital admission, the etiologies of SBR are (1) bladder calculus (2)cystitis (3) carcinoma (4) Tuberculosis. Bladder rupture commonly presents with hypogastric pain or tenderness, abdominal distension and hematuria. However, the signs and symptoms may be nonspecific and often insidious, leading to a delay in presentation as well as diagnosis. Various tests have been employed for diagnosis of bladder rupture, including ultrasonography , retrograde cystogram and computed-tomography with or without cystography. Intraperitoneal Bladder Rupture (IBR) is commonly managed surgically; extraperitoneal (EBR) can be managed conservatively .

However, reports of converse forms of management of each group exist in the literature, especially in SBR. SBR has been associated with a mortality rate of 25-50% . Many of these deaths can be ascribed to septic complications as a result of delayed presentation and diagnosis. This mortality rate emphasizes the importance of early recognition. ***(1)*** Squamous cell carcinoma of the bladder (SCCB) is uncommon in non Schistosoma endemic areas, which in turn accounts for 2.7% of bladder cancers in the developed world . A study from Sri Lanka showed that about 2.9% of bladder cancer were squamous cell carcinoma. SCCB can be subclassified as bilharzial and non bilharzial depending on the aetiology due to Schistosomiasis haematobium . Non bilharzial squamous cell carcinoma is associated with conditions causing chronic bladder irritation which are bladder stones, recurrent urinary tract infections, chronic bladder outlet obstruction, indwelling catheters and even intravesical Bacillus Calmette-Guerin (BCG) which result in subsequent metaplasia and malignant Transformation. Chronic bladder irritation with bladder calculi is a known predominant risk factor for SCCB.(***2***) We present a case of a 52-year-old male patient presenting with Acute Abdomen which was later diagnosed as SBR ,as a result of SCCB which in turn was due to a giant Vesical Calculus.

CASE REPORT:

HISTORY: A 52 year old man presented to the emergency department with features suggestive of acute abdomen and of acute Intestinal Obstruction. He complained of pain per abdomen and reduced appetite since the last 15 days. , the patient gave history of burning micturition along with episodes of hematuria once in 2 months over the past one and a half year. However the patient did not take any proper medical advice for the same and had developed the habit of taking over the counter pain medications for lower abdominal pain.

EXAMINATION AND LAB REPORTS :

Upon clinical examination there was abdominal tenderness which was generalized in nature and guarding could be appreciated. The X-ray KUB showed a giant bladder calculus in the Right Hemipelvis(Figure 1.). USG Abdomen and Pelvis revealed a 5cm x 7 cm stone in the Urinary Bladder with mild septated ascites .Upon paracentesis, straw colored fluid was aspirated(Figure 1.1). Hematological Investigations were sent for and suggestive of Acute Renal Failure as the Renal Function Test showed a raised Serum creatinine level of 3.99 mg/dl and the serum urea level was 200 mg/dl with urine output being less than 0.1 ml/kg/hr

Figure 1 showing vesical calculus in the Xray KUB..

INTRA OP FINDINGS (24/12/2020*)*:

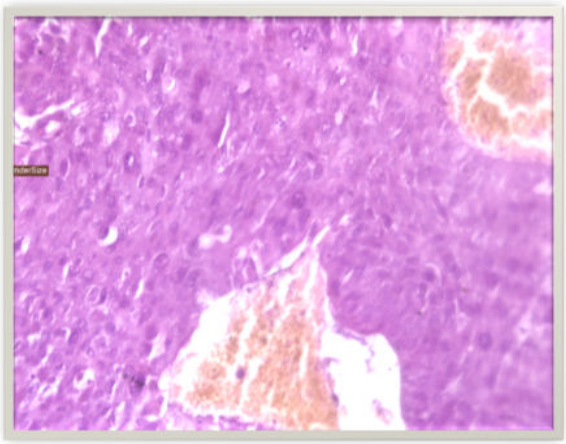
After Proper Informed Consent , Emergency exploratory laparotomy was performed under General Anesthesia, On Exploring The Abdomen through Midline vertical Incision , Dense Adhesions were found between the Bowel loops, Adhesiolysis was performed. Multiple pockets of Uro ascitic fluid was present between the Bowel loops along with pus flakes.600 ml of Uro ascitic fluid was drained. No abnormality was found on the Bowel , upon Exploring The Rectum a transverse rent of 4x2 cm was found in the Dome of the Bladder(Figure 2.0) over the Posterior wall ,The stone was delivered through the rent(Figure 2.1) . The Bladder was completely filled with Pus debris and the Posterior wall was Edematous and friable .The rent was repaired using silk suture in a continuous fashion. A part of the friable tissue was sent for Histopathological Examination to the Department of Pathology. A pelvic and subhepatic drains were placed and the abdomen was closed.

Figure 2.0 showing a rent measuring 4x2 cm .

DISCUSSION

SBR without a history of recent trauma or instrumentation is rare. An incidence of 1 in 126,000 is reported.***(3)*** It is usually associated with bladder wall disease (42%) or the urinary retention (35%). Various bladder wall pathologies have been reported to cause perforation include prolonged cystitis, tuberculosis and carcinoma. Also relatively common at the site of perforation are diverticula of the bladder, sometimes impacted with a stone. Less common pathologies include lipomatosis, changes caused by drugs such as cyclophosphamide irradiation and scars from previous surgery. Inflammation of the bladder wall secondary to inflammation elsewhere in the pelvis, severe enough to cause spontaneous rupture has also been reported. Urinary retention leading to perforation may be of obstructive or neurologic in origin. Causes of obstruction associated with perforation include urethral or bladder calculi, prostatic hypertrophy and obstruction of an indwelling Foley's Catheter.

The association between chronic bladder irritation and squamous cell carcinoma has been postulated by many researchers .Chronic bladder irritation includes chronic or recurrent urinary tract infection, chronic indwelling urinary catheter, bladder calculi, foreign bodies, intravesical Bacillus Calmette-Guerin (BCG) and prolonged exposure to cyclophosphamide . Bladder cancer is associated with upper and lower urinary tract stones .Long-standing bladder stones have been implicated as a cause of squamous cell bladder cancer via chronic mucosal injury with resulting inflammation and disruption of the protective glycosaminoglycan layer. Our patient's unusual presentation with Giant Vesical Calculus and squamous cell carcinoma highlights this association. The 5-year and 2-year overall survival rates have been reported as 10.6% and 47.6% respectively from M.D. Anderson Cancer Center . Radical cystectomy remains the mainstay of therapy in select patients with resectable disease. Chemotherapy and radiation therapy can be considered in patients who are not surgical candidates or patients with metastasis.(***4***)Most likely, the bladder expands at its superior portion and eventually tears at the thinnest portion, the dome, into the Peritoneal Cavity. In our patient, HPE that was sent for was suggestive of Moderately Differentiated squamous cell carcinoma of Urinary Bladder. At times perforation of the bladder could have occurred secondary to outflow obstruction caused by obstructing effect of the stone or could also be due to long term effect of SCCB. Alternatively, perforation could have occurred due to pressure necrosis as a result of the SCCB. Common clinical presentation of bladder rupture is abdominal pain mainly in hypogastrium, abdominal distension, pyrexia, hematuria. Some patients may present with acute abdomen.



HPE report suggestive of SCC of urinary Bladder.

weakened the bladder wall and contributed to this condition. The main presenting symptoms are mainly those of peritonitis and like with our case there may be indications of acute renal failure due to the peritoneal absorption of urine I.E. Reverse autodialysis of urine across the peritoneum leads to an increase in serum urea and creatinine with severe dyselectrolytemia mimicking a picture of acute renal failure. This is often further complicated by episodes of vomiting, diarrhea and the ensuing intravenous fluid resuscitation. (***5***)In this scenario, clear urine in the urobag and the negative history of abdominal trauma confounded the diagnosis and we worked with a differential diagnosis of a developing subacute intestinal obstruction. As mentioned earlier

SCCB is less frequent than UC, interestingly bladder rupture can occur more frequently with SCC than UC . According to Hassan Abol-Enein , SCC carries poor prognosis and most of the patients died within 1–3 years. Locoregional recurrence was found to be the most common cause of death. Management strategies in general consist of radiotherapy, radical cystectomy and chemotherapy. The most useful imaging studies to diagnose this condition are the combination of cystography and CT scan . Once The Diagnosis is established, surgical intervention is indicated for intraperitoneal rupture, while the extra-peritoneal rupture is usually managed conservatively. The prognosis of this condition when associated with carcinoma is very poor and in a literature review performed by Ahmed J et al. most patients died within 8–10 months . After managing this acute condition, management of the underlying condition should be started ,In general SCC is considered less responsive to chemotherapeutic agents than UC. ***(6)***

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