Spontaneous Intra-Peritoneal Perforation Of The Urinary Bladder From Squamous Carcinoma Presenting As An Acute Abdomen

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Citation

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Abstract

Perforation of the urinary bladder without history of antecedent trauma is a rare clinical occurrence. However, in patients with an acute abdomen, especially those with previous voiding symptoms, this diagnosis should be considered. The following case presented with an atraumatic bladder perforation and peritonitis secondary to chronic inflammation and squamous cell carcinoma. A review of the literature of this rare and frequently fatal condition is included.

SITE OF CASE REPORTED

Dept of Surgery, Musgrove Park Hospital, Taunton, Somerset

CASE REPORT

A 72 year old presented to the general surgical on call with a 24 hour history of lower abdominal pain, a four day history of constipation on a background of a 3 month history of urinary incontinence and recurrent urinary tract infections. He had a previous history of paraplegia following spinal surgery ten years ago, hypertension and left inguinal hernia. His paraplegia had not affected his ability to control his continence and ability to defecate.

Physical examination found the patient to be apyrexial with normal observations and no signs of systemic illness. Abdominal examination found the patient to be tender across the lower abdomen diffusely without guarding or rebound tenderness. Bowel sounds were absent.

Initial laboratory investigations showed a leucocytosis of 32.50 x 10^9 (neutrophils of 31.07 x 10^9), a CRP of 68, a raised creatinine of 146 mmol/litre, a low albumin of 23 mmol/litre and normal arterial blood gases.

Abdominal and chest radiographs showed distended large and small bowel with gas in the rectum and large volumes of faeces with no obvious signs of perforation.

He was initially treated for constipation and urinary tract infection with antibiotics and enemas. However over the course of the next 3 days the patient started vomiting and his inflammatory markers worsened (white cell count of 50.01 x 10^9, CRP of 228) while remaining relatively well clinically.

A CT scan was performed on day 4 which showed large and small bowel dilation and suggested perforation of the colon but was not diagnostic. Following the scan the patient began to deteriorate by becoming pyrexial, tachycardic, confused and oliguric. He was transferred to intensive care where he was medically optimized before his laparotomy.

Emergency laparotomy revealed a distended colon and small bowel, a sigmoid volvulus, large volumes of free fluid in the pelvis and right upper quadrant and a postero-superior perforation of the urinary bladder that clinically was a bladder tumour. The bowel was decompressed and the volvulus was repaired with a sigmoidopexy. Primary repair of the bladder was not possible or attempted due to the extensively diseased bladder wall. Two large bore drains were sited to the pelvis to facilitate drainage of urine and the abdomen was washed out.

The following morning a renal ultrasound showed moderate bilateral hydronephrosis and bilateral nephrostomies were inserted to drain urine and prevent further soiling of the peritoneal cavity. The patient initially did well post-operatively but developed a severe pneumonia on day 15 which eventually led to his death.

The pathology department received a number of small samples totalling approximately one cm^3. These samples

displayed poorly differentiated squamous cell carcinoma infiltrating the lamina propria and bladder muscle.

DISCUSSION

Spontaneous atraumatic rupture of the urinary bladder is a rare event as has been previously outlined in reviews from Bastable [1] et al in 1959, Rasmusen [2] in 1994 and Mydlo [3] et al in 1999. Spontaneous rupture of the bladder due to carcinoma is even rarer still once bladder perforation due to radiotherapy has been excluded.

In a normal population of bladder carcinoma, 90% are due to transitional cell carcinoma, 5% due to squamous cell carcinoma and 2% due to adenocarcinoma. There is some evidence to suggest that carcinomas that cause perforation are more likely to be squamous. Of 13 cases reviewed by Ramusen[1], 5 had squamous carcinoma and 8 had transitional cell carcinoma. Examining cases since 1994 confirms this trend though the overall number of cases is too small to be statistically significant.

Spontaneous bladder rupture can be either intra or extra peritoneal. Of 14 cases (identified via Medline – searched with: “bladder perforation carcinoma”) concerning spontaneous bladder perforation due to carcinoma [1,2,3,4,5,6,7,8], 4 describe extra-peritoneal perforation with a majority of 10 studies describing intra-peritoneal involvement. Extra-peritoneal perforation is typically associated with urinary symptoms like haematuria and not with the picture of peritonitis as demonstrated by this case report and others.

CONCLUSION

Intra-peritoneal perforation of the bladder due to carcinoma is a rare but recognised cause of peritonitis and should hence be considered in the differential diagnosis of an acute abdomen.

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