Perforation of the Bladder

1921

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There was reported by Dr. W. A. Anderson in the previous number of the Journal the notes on a fatal case of apparently spontaneous rupture of the urinary bladder.

The following notes on a case of traumatic perforation of the bladder may be of interest:

W.A (male, age 41 years) was admitted to hospital about 5 p.m. on 3rd May, 1921, with this history:—Two or three hours previous to admission he was descending a ladder from a threshing-machine, when he was impaled by the sharp broken end of a pitchfork handle. The implement entered the perineum, and he withdrew it himself. In his opinion it must have entered at least six inches. He noticed its withdrawal was followed by a gush of water—not blood. After examination by his doctor he was ordered to hospital with a diagnosis of “suspected rupture of bladder.”

On admission patient's temperature was 98 and pulse 64. He did not appear ill and there were no signs of shock, in spite of a motor run of 20 miles. There was no vomiting or nausea. There was no pain except about perineum, and this was only elicited on turning the patient over to examine him. Examination revealed a punctured wound one inch in front of anus and slightly to left of mid-line. This wound was not bleeding and there was no sign of escaping urine. A probe could only pass two inches into the wound. Per rectum—Some tenderness over the prostate, but no sign of laceration in rectal wall, nor could any damage to prostate be felt. There was no sign of blood about urethral meatus. Patient had not attempted to micturate since accident. Examination of abdomen revealed slight tenderness on deep palpation over bladder. There was neither rigidity nor guarding, and abdomen moved freely with respirations. There was no evidence of extravasation of urine into cellular tissues of lower abdominal wall. A rubber catheter passed without obstruction into bladder and seven ounces of clear urine withdrawn. There was no blood in urine. Care was taken to pass the catheter just into the bladder to avoid the chance of catheterising the peritoneal cavity, should there be an intra-peritoneal perforation.

From the patient's history it seemed evident there was a perforation of the bladder. The question immediately arose, when deciding the treatment, was perforation intra or extra-peritoneal, or both? From the position of the wound and general condition of the patient the more likely type was the extra-peritoneal, but there was the possibility of the fork handle having penetrated two walls of bladder, producing two laceration, one of each type.

The patient was advised to submit to an exploration of the wound under anaesthesia, as the probe could only pass two inches and the wound was too small to insert the finger. However, the patient was averse to this, as there was no clinical evidence, apart from his statement, that the bladder was perforated. It was therefore decided to keep him under observation.

A catheter with suction apparatus was tied into the urethra about 7 p.m. After about three ounces of clear urine had been drawn off, patient pulled out the catheter. He spent a fairly comfortable night.

When seen at 9 a.m. on the 4th his temperature was 99.2 and pulse 60. He did not complain of any pain, but on examination there was more tenderness on pressure over bladder region, but still neither rigidity nor guarding. There was no sign of extravasation of urine under the skin nor escape from perineal wound or urethra. Abdomen was examined for free fluid, but this could not be elicited, although there was dullness in left iliac fossa. Bowels acted well with enema. Bladder was catheterised and eleven ounces of urine withdrawn. This urine was quite clear except the last two or three drachms, which were blood-stained.
Patient had had no desire to pass urine and had not attempted to do so.

When seen in the afternoon his temperature and pulse were same as at 9 a.m. He was more tender over bladder and now a little guarding was elicited. The abdomen was also slightly distended. Patient now had desire to micturate, but was unable to do so. Examination of blood revealed a leucocytosis of 13,000. Free fluid in the abdomen was not definitely elicited, but the dullness in the left iliac fossa had increased. Patient was advised that operation could no longer be delayed, and this time he was quite agreeable to submit.

The signs and symptoms pointed to an intra-peritoneal tear, so a mid-line incision was made between umbilicus and pubis. On opening peritoneum free urine was found in the cavity, and inspection of the bladder revealed a gaping tear one inch long high up on the posterior surface of the bladder. The bladder still contained several ounces of clear urine, and with each respiratory movement a little urine was spilled into the abdominal cavity. The peritoneal cavity was swabbed dry and the deepest part of the pelvis inspected. The bowel was normal and a wound was seen in the peritoneum between the rectum and bladder. The lips of this wound were already becoming glued together with lymph. This lymph was the only sign of peritonitis, as there was not even any injection of the intestinal capillaries. On inspecting the bladder further it was seen to have received only one wound, and this was closed by purse-string and Lembert suture. A drain was left down to the pelvis and the abdomen otherwise closed. Before closing a rubber drain was passed into the perineal wound up to, but not through, the peritoneal wound in the pelvis. A catheter was also left in to drain the bladder.

The patient’s after-history was uneventful. The catheter was removed in 36 hours, and the two drainage tubes after 48 hours. The wounds healed practically by first intention. The patient was up in a fortnight and discharged at the end of three weeks. As soon as the catheter was removed he regained full and normal control of the bladder.

This case is interesting in one or two aspects:—(1) Entire absence of symptoms of any serious internal injury. When a traumatic rupture of the bladder occurs with other lesions the bladder condition is apt to be overlooked. (2) Text-books state that in these cases on catheterising a little blood only is withdrawn. Here several ounces of clear urine were withdrawn, and at time of operation there was still clear urine in the bladder. (3) This case is typical, in that peritonitis is of slow and gradual onset in a low form when the urine remains aseptic. Death usually occurs about the fifth or sixth day if condition is untreated. (4) The site of the perforation. The implement evidently passed between bladder and rectum and must have entered a distended bladder. Damage to prostate and seminal vesicles could not be elicited and urethra certainly was intact.

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