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A Confusing Case of Pneumoperitoneum Following Blunt Abdominal Trauma

Medical Science

KEYWORDS : Laparotomy, Digital rectal examination, Loop colostomy, Contrast Enhanced CT

Abhinav Prakash Arya — Senior Resident, Department of General Surgery, Trauma Centre, Institute of Medical Sciences, B.H.U., Varanasi -221005

Indra Singh Choudhary — Junior Resident, Department of General Surgery, Institute of Medical Sciences, B.H.U., Varanasi -221005, U.P.

ABSTRACT

A 20-years old male presented with history of blunt trauma abdomen in a road traffic accident with complaint of pain in the pelvis with in ability to pass the urine. Diagnostic imaging (Contrast Enhanced CT) revealed pelvic fracture with probable urethral injury along with free peritoneal air. Laparotomy was performed but no gastro-intestinal perforation could be identified and abdomen was closed. Patient was shifted to post-operative care and the nursing staff reported passage of blood per rectum over the bed-sheets 2 hours after the surgery. Digital rectal examination repeated and revealed blood stained finger. Patient was re-explored and during this exploration the deeper pelvis, which was initially obscured by pelvic hematoma, was examined thoroughly. A rent in anterior rectal wall identified and repaired primarily along with fashioning of proximal diverting loop colostomy.

Introduction

Blunt trauma abdomen presents itself in various ways and associated with pneumoperitoneum is a grave sign that increases morbidity and mortality. Pneumoperitoneum warrants a thorough exploration of the cause and appropriate management to skip such

Case Report

A 20 years old male presented with the history of road traffic accident 3 hours back. At the time of presentation patient was complaining of pelvic pain and inability to pass urine. On examination, patient was conscious, well oriented with pulse rate of 102/min, blood pressure 102/76 mm Hg and SpO2 95% at room air. On clinical examination, there was no obvious facial/head injury and bilateral equal air entry in the chest. There were superficial abrasions over anterior abdominal wall and generalized abdominal tenderness more over the lower abdomen. It was associated with masking of liver dullness. No abnormality was detected on examination of back and there was blood at the tip of the glans. Digital rectal examination was within normal limits. Pelvic compression-distraction test was positive. Suspecting the urethral injury urethral catheterization was abandoned and supra-pubic cystotomy was done. Afterwards patient was shifted in radiology for contrast enhanced CT scan (CECT) of abdomen. CECT revealed free peritoneal air, hematoma in the pelvis and anterior abdominal wall associated with fracture of the transverse process of 4th lumbar vertebra and left pubic ramus fracture.

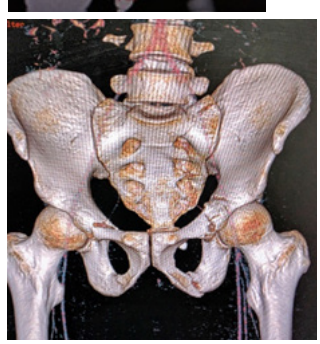

Figure:[A] & [B] CECT abdomen showing free peritoneal air; [C] 3-D reconstruction of CT pelvis showing fracture of left pubic ramus and transverse process of 4th lumber vertebra (findings shown with arrrow).

Patient was shifted to OR and exploratory laparotomy was done. Peritoneal cavity was looking apparently normal and there was no fecal contamination. Stomach, lesser sac, small and large intestine up to proximal rectum was traced and no abnormality was detected. Further exploration was abandoned and abdomen was closed. Patient was shifted into post-operative recovery room where the nursing staff noticed presence of blood in the diapers, 2 hours after the surgery. On digital rectal examination, finger was stained with blood. Patient was again shifted to OR for re-exploration. Pelvic hematoma was evacuated thoroughly and a small rent was noticed in the anterior rectal wall. Primary closure of the rectal tear and proximal descending loop colostomy was done and abdomen closed. Patient recovered

in post-operative period as expected and colostomy started functioning on post-operative day 3. Patient was discharged on post-operative day 6.

Conclusion

Alert post-operative vigilance prevented a life threatening bowel injury going unnoticed and the decision of immediate re-exploration provided the appropriate and timely management.

References:

1. Kane NM, Francis IR, Burney RE et al. Traumatic pneumoperitoneum. Implications of computed tomography diagnosis. Invest Radiol 1991 Jun;26(6):574-8.
2. Ong CL, Png DJ, Chan ST. Abdominal trauma: a review. Singapore Med J Jun 1994;35(3):269-70
3. Stapakis JC, Thickman D. Diagnosis of pneumoperitoneum: abdominal CT vs. upright chest film. J Comput Assist Tomogr 1992;16(5):713-6
4. Tomoi Sato, Yasuo Hirose, Hideki Saito, Mutsuo Yamamoto, Norio Katayanagi, Tetsuya Otani, et al. Diagnostic Peritoneal Lavage for Diagnosing Blunt Hollow Visceral Injury: The Accuracy of Two Different Criteria and Their Combination Surg Today 2005;35:935-9.