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Isolated Injury to Appendix : A case report

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Summary :
Trauma involving the vermiform appendix only is rare. A case of blunt abdominal trauma that involved the appendix without involvement of any other intra abdominal organ is reported here. Possibility of trauma to the appendix should always be sought specially when abdominal trauma is in the vicinity of the structure.

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Introduction :
Appendix is not usually involved in most blunt or penetrating abdominal trauma. Its small size and its relatively secured situation in pelvic, retroceacal or para-colic position may contribute to rarity of injury specially when all other organs remain intact. More than forty cases has been reported so far where appendix was injured without involvement of other intra abdominal viscera[1]. Cases have been reported both in blunt and penetrating abdominal trauma where appendix was the only structure involved in an intra abdominal injury. Preoperative diagnosis is only presumptive. Per-operatively diagnosis may be missed without meticulous exploration and may lead to severe morbidity or even mortality.

Case note
Mr. A R, a young man of 35, was admitted in neurosurgery unit of Chittagong Medical College Hospital following a Road Traffic Accident. He also had an abrasion in lower abdomen. His GCS score was 8 and improved in 48 hours from head injury. He started complaining of abdominal pain and distension. He was transferred to surgical unit for abdominal condition.

On clinical assessment patient was found to be haemodynamically stable and conscious. Abdomen was slightly distended, soft and there was no tenderness except over the abrasion 2 to 3 inches above the right inguinal ligament. There was no lump and Liver, Spleen or Kidneys were not palpable. Bowel sounds were audible. A fluctuating haematoma was palpable in right lower quadrant with step like defect implying discontinuity of deeper layers. Movement of right hip was painful. Plain radiograph of abdomen was unremarkable and no sub-diaphragmatic free gas shadow was seen.

Exploration was done through a transverse lower abdominal incision on right side. Muscles of anterior abdominal wall were found disrupted lateral to rectus abdominis along with peritonium. A loop of small intestine was protruding through the peritoneal rent. There was only a little serous collection in the peritoneal cavity and no sign of peritonitis. All solid viscera and gut were found intact. When followed distally appendix was found buried into torn ilio-psoas muscle posteriorly. Distal part of appendix was crushed and devitalized with a small sero-purulent collection in between the torn muscle. Appendicectomy was done. Peritoneum was closed keeping a drain through separate stab wound.

The wound was meticulously explored upto its depth and cleaned of all debries and dead tissue. Complete haemostasis was achieved. Wound was irrigated with antiseptic solution and closed in layers keeping another drain in the parietal wall.

Postoperatively patient had antibiotics and analgesics. He was allowed oral feeding on third postoperative day. Patient returned home on tenth postoperative day after complete recovery. A course of physiotherapy followed.

Discussion :
Isolated injury to appendix is a rare event but still has been reported both in blunt and penetrating abdominal injuries. Factors favouring safety of appendix may be its mobility, relatively smaller size, or placement behind ceacum or terminal ileum or deep in pelvic cavity. A slippery serosal covering may also contribute to escape trauma.

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First report of direct isolated injury came from Fowler[2] in 1936. In 1956 , Gatewood and Russum[3] reported a case of complete transection of the appendix following a blunt trauma in a motor vehicle accident . At operation the appendix was found freely floating along with tear of rectus abdominis muscle and a torn mesentery near terminal ileum. The mechanism is believed to be a force acting against posterior abdominal wall.

Geer et al[4] reported two cases of appendiceal trauma. One of them was due to a penetrating bullet injury causing injury of the appendix. Second case followed blunt trauma due to MVA. This resulted in separation of appendix from mesoappendix. Possible mechanism seem to be a shearing force acting against a fixed retroperitoneum. Edwards[5] and his colleagues reported a case of transection of appendix in a patient of 41 years in Ohio USA due to seat belt injury. Possible mechanism may be a compression of abdominal viscera against pelvic bones. Statter MB, and Coran AG reported a case of appendiceal transection associated with a lap belt restraint in a small child[6]. Paul[7] also reported a case of appendiceal trauma in blunt abdominal injury.

Acute Appendicitis may occur after a blunt abdominal trauma without being directly injured in the event. Serour[1] reported three such cases of acute appendicitis following blunt abdominal trauma. They reviewed the literature in an attempt to find relationship between blunt abdominal trauma and Post-traumatic appendicitis (PTA). They defined it as acute inflammatory process following blunt abdominal trauma in a previously healthy individual, provided the appendix has not been severely injured by the trauma itself. Symptoms appear between 6 and 48 hours after trauma. They identified about forty cases of post traumatic appendicitis from world literature. Hennington also reported two cases of acute appendicitis following abdominal trauma[8]. Suggested mechanisms include ileoceacal haematoma, mesenteric disruption, forceful displacement of stool and gas into appendix with consequent proliferation of bacteria. Resulting occlusion of lumen cause obstructive type of appendicitis.

Conclusion :

Although rare, injury to the appendix may occur both in blunt and penetrating trauma. Search should always include appendix specially when trauma is violent and involves lower abdomen

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