Orthopaedic Guide Wire Injury to Ileum in a Case of Fracture Neck of Femur

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Abstract Iatrogenic perforation of the bowel is a rarity and no case has been reported in the literature so far, of iatrogenic ileal perforation due to orthopaedic guide wire insertion while doing open reduction and internal fixation of fracture neck of femur. As the number of these fixation procedures is increasing by the day it is imperative that surgeons remain aware of this potential complication and take pre-emptive measures to prevent it.

Keywords Iatrogenic · Ileal perforation · Fracture neck of femur

Introduction

In this era of rapid urbanisation road traffic accidents (RTA) are on the rise. Long bone fractures neck of femur are being routinely fixed under x-ray image intensifier guidance. Due to commonness of the procedure and high patient load, steps of check x-rays are often omitted which results in such injuries.

Case Report

A 23 year old male presented to the emergency with complaints of pain in abdomen. He had met with a RTA

resulting in fracture neck of femur; open reduction and internal fixation (ORIF) was done the previous day. On examination, abdomen was distended with mild tenderness; vitals were stable. Routine x-ray abdomen revealed an orthopaedic guide wire within the abdominal cavity (Fig. 1a). CT abdomen was done to rule out vascular, solid organ and hollow viscus injury. Sequential scans confirmed the presence of guide wire in the abdomen with mild fluid collection in the pelvis. No other injury was found (Fig. 1b). During this period patient developed signs of peritonitis. The patient and his relatives were told about the nature of the injury and his present clinical condition. Fully informed consent for laparotomy was obtained after explaining the risks involved.

The patient was then explored under general anaesthesia. The guide wire was successfully retrieved through greater trochanter approach. Simultaneously abdomen was explored through a lower midline incision. Two small perforations representing the entry and exit sites of guide wire were found in terminal ileum (Fig. 2). They were primarily closed in double layer. Peritoneal lavage was done and wound closed after placing a pelvic drain. The patient made an uneventful recovery and was discharged on 10th postoperative day.

Discussion

Iatrogenic bowel perforation is an uncommon event. All the available data in this regard consist of sporadic case reports eliciting various modalities of iatrogenic bowel injuries like perforations secondary to surgical drains [1], flush ligation of umbilical stump in cases of exomphalos minor [2], terminal ileum perforation due to misplaced percutaneous suprapubic cystostomy [3], perforation of ileal conduit

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Fig. 1 **a** X-ray abdomen showing orthopaedic guide wire in abdominal cavity. **b** CECT Abdomen showing closed proximity of guide wire to vital structures

during loopography [4]. Iatrogenic large bowel perforations have also been reported especially after colonoscopy and barium enema [5] and after performing anal manometry in patients who have undergone restorative proctectomy [6].

All the aforementioned case reports including this one was an occupational mishap resulting from instrument malfunction. In this case the guide wire was pushed in along with the screw instead of only the screw and then missing it for want of check x-ray. This underlies the importance of identifying various mechanisms and modalities which may lead to such iatrogenic injuries

so that more caution and pre-emptive measures are taken to avoid such injuries.

Conclusion

The nature of instrumentation in ORIF fracture neck of femur is such that it may well cause injury to any solid organ, blood vessels and hollow viscus. We suggest that check x-rays should be performed at all the major steps of fixation and essentially at the end of the procedure.

Fig. 2 Terminal ileum showing perforations caused by entry and exit of guide wire

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