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Case Study

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ABDOMINAL EVISCERATION AFTER BLUNT TRAUMA: AN INTERESTING CASE REPORT

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ABSTRACT

We Report a case of 25 year old doctor after he got injured by bursting of a coffee machine. The patient presented to our tertiary care institute after being referred from local hospital about 5 hours after trauma. On Presentation, After Resuscitation, Patient was immediately taken to the operation theatre. Our aim with this report is to emphasize the importance of early surgical management and prompt abdominal exploration and surgical repair provide good clinical outcome without complication and to review the relevant literature.

CASE PRESENTATION

A 25 year old male patient was referred to our institution after patient had injury due to bursting of a coffee machine (Figure 1) while attending his sister marriage function. Initial resuscitation was given in local hospital after which patient was referred to our tertiary care institute for further management. First physical examination in the ED revealed that the patient was stable, cooperated and oriented. His pulse rate was 110 beats/minute, respiratory rate was 24/minute, peripheral O2 saturation was 94% and the blood pressure was 160/100 mmHg. His Glasgow coma score was 15. No accompanied injuries were found on physical examination. Despite being haemodynamically stable, this patient was markedly distressed due to pain. There was a large laceration approximately 17 cm in length at the right side of the abdomen about 3 cm above anterior superior iliac spine from which small and large bowel eviscerated. On Presentation, Resuscitation was started by securing intravenous access and infusing isotonic crystalloids. We immediately catheterised the patient, inserted nasogastric tube, administered opioid analgesia, proton pump inhibitors and broad-spectrum antibiotics (metronidazole and Piperacillin-Tazobactam) in the emergency room. The exposed viscera were washed with 1 L of normal saline and then wrapped in a moist towel. Laboratory Investigations of patient were sent (Figure 2). This patient met an indication for exploratory laparotomy to reduce the viscera, repair the abdominal wound and address any additional injuries encountered. The patient was taken immediately to the operating room. In operating Room, Peritoneum was entered through a midline incision separate from the original traumatic wound. A thorough inspection of the intra-abdominal viscera and retroperitoneum was performed. Solid organs were grossly normal. There was no breach in mesentry. Rest of the Bowel loops were viable No serosal tear, perforation or gangrenous changes were seen. The eviscerated bowel was oedematous, congested and dilated. Peristalsis was present in eviscerated bowel. There were no additional intra-abdominal injuries noted. The viscera were lavaged with 3 L of normal saline and reduced into the abdomen. The abdomen was then washed out. The devitalized skin and subcutaneous fat were debrided from the traumatic wound. The wound margins were debrided and closed in layers. 1 drain was kept in pelvis (Figure 4). Abdominal wall was then closed in layers. Drain was removed on Day3. Postoperative period was uneventful and patient was discharged 1 week after the injury.

DISCUSSION

Abdominal evisceration after blunt trauma is exceedingly rare. Several injury mechanisms have been reported including a horse falling onto a rider's abdomen,[9] two cases of riders falling onto bicycle handlebars,[2-8] three abdominal crush injuries in road traffic accidents,[145] three pedestrians in vehicle collisions[6] and uncontrolled descent on a waterslide.[3]

The injury mechanism is not well understood, but it is believed that the external blunt force weakens the abdominal wall by shearing the musculofascial layers[10] and simultaneously raises intra-abdominal pressure.[7] This leads to an acute traumatic hernia where there is fascial disruption but intact skin.[10,11] With sufficient injury force, the skin can also be disrupted to allow evisceration. The eviscerations tend to occur more commonly at anatomic weak points, such as the lateral border of rectus,[7] lower abdomen,[8] inguinal region[11]

or natural orifices.[3,7] In our case, the abdominal wall defect was located transversely over the lower abdomen, in the region of the linea semicircularis—an area of weakness where the posterior rectus sheath is deficient. Traumatic eviscerations are dramatic injuries that may dominate clinicians' attention in the emergency room. But there are often associated injuries due to the significant force that is imparted. Associated injuries may be present in up to 30% of cases.[12] These injuries require prompt surgical attention. While resuscitation proceeds, a rapid secondary survey should be performed to identify polytrauma injuries. After stabilisation, these patients should be taken to the operating room. A careful search should be carried out for associated injuries at exploratory laparotomy. The abdominal wall laceration should be debrided and then repaired in layers. However, when there is marked oedema, significant tissue injury and/or an unstable patient, abdominal wall closure becomes less important and a staged closure would be more appropriate.[10,13] We did not believe that this was required in the index case as there was little tissue loss after debridement and the abdominal wall tissues were healthy. Therefore, we could achieve a tension-free fascial closure and the skin closed primarily.

Figure 1: Traumatic Evisceration of Bowel.

Haemoglobin	13.4 g/dl
Haematocrit	39.5 %
Platelet count	163 thou/ul
Total Leucocyte Count	11.50 thou/ul
BUN	18 mg/dl
S.creatinine	0.99 mg/dl
Sodium	142.8 mmol/l
Potassium	4.0 mmol/l
Chloride	105.3 mmol/l
Alanine Aminotransferase	52.3 U/l
Aspartate Aminotransferase	40.5U/l
Protein (Total)	6.61 g/dl
Albumin	3.74g/dl

Figure 2: Investigations of Patient.

Figure 3: Postoperative picture of closure of wound.

Grade	Description
I	Subcutaneous tissue contusion
II	Abdominal wall muscle hematoma
III	Singular abdominal wall muscle disruption
IV	Complete abdominal wall muscle disruption
V	Complete abdominal wall disruption with herniation of abdominal contents
VI	Complete abdominal wall distruption with evisceration

Adapted from Dennis *et al.*[7]

Figure 4.

CONCLUSION

Traumatic abdominal evisceration after blunt injury is extremely rare (Figure 4). This is a very rare case of bursting of Coffee machine and causing abdominal evisceration. If the patient is clinically stable, associated injuries should be excluded. Exploratory laparotomy is mandatory, and if possible, primary abdominal wall closure should be performed. Isolated evisceration is potentially life-threating, but has a very good prognosis, if adequate treatment is immediately provided.

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