

Abdominal Trauma



Background

The management of the patient with abdominal injuries is a complex matter requiring expert multidisciplinary input. The advent of the major trauma networks has improved survival for severely injured patients but has reduced the familiarity of Trauma Units (TUs) with this type of patient as well as seeing a reduction in the number of surgeons who are familiar with performing damage control surgery (DCS) and emergency laparotomy for the injured patient.

Evaluation

Early thorough clinical assessment is essential and additional caution should be exercised in patients who have multi system trauma as abdominal injuries are easily missed in this group.

- CT scanning is the investigation of choice for suspected abdominal injuries.
- CT scanning is the investigation of choice for children with suspected abdominal injuries (ref). There is no role for ultrasound scanning in the assessment of the injured child.
https://www.rcr.ac.uk/sites/default/files/publication/BFCR%2814%298_paeds_trauma.pdf
- FAST (Focussed Abdominal Sonography in Trauma) scanning is very operator dependent and can be unreliable. It is a rule in investigation only and should not routinely be used in the assessment of the injured patient¹.
- Few patients are truly too unstable for CT if appropriate resuscitation has occurred, a CT scan is especially helpful in blunt trauma. Patients should be assessed on an individual basis to see if their blood pressure responds at least temporarily to allow a CT scan, ideally on the way to an operating theatre if the patient continues to drop their blood pressure.

Management

Management options include:

- Operative
- Non-operative management with Interventional Radiology
- Non-operative management without Interventional Radiology

Each of these options may take place in the TU or in the MTC.

Transfer to the MTC

Patients with significant single organ trauma, or with multiple organ trauma should be discussed with the MTC TTL.

Management and indications for laparotomy in the Trauma Unit

- Solid organ injury in stable patients may be managed conservatively with the patient in a critical care area.
- Patients being considered for damage control surgery at the TU should also be discussed with the MTC TTL.
- A surgical consultant should be present for all Emergency laparotomy

Principles of damage control surgery

- Utilise damage control principles (proximal control & Distal control of vascular injuries, haemostasis of solid organs by removal for kidney or spleen and packing, repair or stapling and leaving transected ends for faecal contamination, or repair or urinary diversion for urinary tract injuries) over definitive procedures in selected patients with physiological compromise, such as massive transfusion, or ongoing acidosis (increased BE, lactate or low pH).
- Consider temporary abdominal closure in the presence of physiological compromise.
- The timing of the second look is dependent on the indication. For vascular shunting relook should be as soon as the patient normalises physiologically or can be transferred to a vascular surgeon. For packing for haemostasis for EG a liver injury, rebleeding is less likely if the relook is delayed for more than 48 hours. For faecal / urinary contamination once the patient normalises physiologically, normally 24-72 hours.

1) FAST scanning has a reported sensitivity of ~90% (range 75-100%) and a specificity of ~95% (range 88-100%) for detecting intraperitoneal free fluid. Sensitivity for detecting solid organ injuries is much lower.

Brenchley J, Walker A, Sloan J, Hassan T, Venables H. Evaluation of Focussed Assessment with Sonography in Trauma (FAST) by UK Emergency Physicians. Emerg Med J. 2006;23(6):446-8.

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