Prioritized management of airway, breathing, & fluid resuscitation (circulation)

↓

Indications for immediate abdominal exploration?

YES → Immediate transport to OR for laparotomy May be combined w/ other procedures as needed.

↓ NO

Shock state with clinical evidence suggesting major intraabdominal hemorrhage?

YES → DPL if no contraindications
[abdominal ultrasound if skilled]
(+) DPL -> OR
(-) DPL -> consider other sources
(+) U/S -> OR
(-) U/S -> CT scan or DPL
equivocal U/S -> DPL

↓ NO

Need for immediate head CT ?

YES → Immediate CT head. CT abd/pelvis performed if no clinical or radiologoical evidence of expanding IC hematoma. Otherwise DPL performed in OR

↓ NO

Indications for objective evaluation of the abdomen (OEA)?

NO → OEA may also be indicated for selected patients based on: age, mechanism, physical findings, and associated injuries. (see below)
Observation with serial abdominal examination & Hct may be appropriate for some patients:

↓YES

objective eval. of abdomen
CT (preferred)
U/S (if skilled)
DPL may be used if other urgent OR needs

↓

CT of abdomen performed?

yes → Operation indicated for CT evidence of:
- Central retroperitoneal hematomas
- peri-pancreatic/duodenal hematomas
- Unexplained free peritoneal blood
- Active hemorrhage contrast extrav.
- Free air or large mesenteric hematoma

↓ no

Abdominal ultrasound for trauma performed?

yes → (+) U/S -> CT for staging solid organs
(-) U/S -> close observation, serial labs & exam

↓ no

DPL performed?

yes → Operation for ≥ 10 cc blood aspirate or cell ct. (>100K RBC's / cu mm.)
Prioritize other injuries for cell ct. (+) only

COMMENTS

Indications for immediate abdominal exploration include:
- ruptured diaphragm
- evisceration
- refractory or profound (e.g. BP < 80) hypotension attributable to abdominal injuries.
- signs of peritonitis on physical examination

Major hemorrhage suggested by:
- initial ED BP < 90 with expected response to fluids
- persistent or recurrent hypotension (BP<100)
- relative BP drop of > 40 mm Hg
- cutaneous evidence of shock
- persistent unexplained tachycardia (P>120)
- grossly abnormal base deficit (< -7)
- initial Hct < 30 or > 10 pt. drop in first 30 min.

Fast helical scanners may allow abd/pelvis scans in < 5 min and should be performed in the absence of dire need for immediate craniotomy. DPL done in OR during craniotomy otherwise. Discussion w/ neurosurgery mandatory

Indicators for mandatory OEA include:
- any documented hypotension
- unexplained arterial base deficit ≤ -4
- associated major chest or pelvic injury
- abdominal pain / tenderness
- signs of lap-belt injury
- Gross or TNTC hematuria
- inability to perform serial abdominal exams e.g. head injury, prolonged anesthesia

DPL should be considered for patients needing immediate procdures for other extra-abdominal injuries:
- angio/embolization for pelvic fx. hemorrhage (altern: CT)
- thoracotomy for chest injury
- craniotomy for head injury w/ neurologic deterioration
- recognized vascular injury (OR/ED angiogram)

See algorithm for hepatic and splenic injuries for indications for non-operative management of these injuries.

Missed injuries that may occur with CT:
Bowel perforations, pancreatic injury(early), mesenteric tears

Missed injuries that may occur with DPL:
Retroperitoneal duodenum, pancreas, kidney/ureters, bladder, occasionally a blunt bowel perforation.

MANAGEMENT ALGORITHM FOR THE INITIAL EVALUATION OF BLUNT ABDOMINAL TRAUMA

babd_dx.doc
rev 2/17/00