

## PRACTICE GUIDELINE

Effective Date: 6-18-04

Manual Reference: **Deaconess Trauma Services**

### **TITLE: PENETRATING ABDOMINAL TRAUMA**

**PURPOSE:** To define appropriate diagnostic tests and therapeutic interventions for the diagnosis of penetrating abdominal wounds. Specifically, these guidelines will help determine the presence of an intra-abdominal injury that will require exploratory laparotomy.

### **DEFINITIONS:**

1. Penetrating abdominal injury: Any penetrating injury that could have entered the peritoneal cavity or retroperitoneum inflicting damage on the abdominal contents. In general, the entry wounds for an abdominal injury extend from the fifth intercostal space to the perineum.
2. Anterior penetrating abdominal injury: An entry wound on the anterior abdomen or chest that could have penetrated into the peritoneal cavity.
3. Thoracoabdominal penetrating abdominal injury: An entry wound below the fifth intercostal space and above the costal margin. These are wounds that could have initially entered the chest and then penetrated the diaphragm to enter the abdomen.
4. Posterior or flank penetrating abdominal injury: An entry wound posterior to the posterior axillary line. Wounds in this area are most likely to be in the retroperitoneum. Additionally, the large mass of flank and back muscle will make the diagnosis of organ injury more difficult and the possibility of organ injury less frequent.

### **GUIDELINES:**

1. Follow the ABC's, and resuscitate patient according to findings of the primary survey.
2. Assess the abdomen looking for entry wounds, bleeding and peritoneal findings. Chest injuries can be associated with penetrating abdominal injuries, therefore, be sure signs and symptoms are clearly understood.
  - a. Determine if there are symptoms or signs suggestive of immediate need for surgical intervention.
    - i. Herniated abdominal contents.
    - ii. Massive bleeding from the wound.
    - iii. Obvious peritoneal signs consistent with hollow viscous injury or hemoperitoneum.
    - iv. Signs of hemodynamic instability associated with the abdominal injury.
    - v. Signs of lower extremity ischemia suggestive of vascular injury.
    - vi. All gunshot wounds with pain or other evidence of intraperitoneal penetration or retroperitoneal organ injury.

- b. If any of the above signs are present, then take patient to surgery immediately for exploratory laparotomy.
- c. For stab wounds, if none of the above signs are present, determine the location of the wound and classify as:
  - i. Anterior.
  - ii. Thoracoabdominal.
  - iii. Posterior or flank.
- d. If the stab wound is anterior:
  - i. Determine if the wound enters the peritoneal cavity by visually exploring the wound. This is done by infiltrating local anesthesia, then prepping and draping the wound. The wound is extended if necessary to allow a visual inspection of the wound to determine its depth. The liberal use of retractors and assistants will facilitate wound exploration.
  - ii. If the wound does not penetrate the anterior fascia, then the wound can be debrided, irrigated and closed. The patient may be discharged if no other injuries exist.
  - iii. If the wound does penetrate the anterior fascia, the laparotomy should be considered. If the patient has no evidence of peritoneal irritation, then a Diagnostic Peritoneal Lavage (DPL) should be performed. Prior to DPL, a Foley catheter and an NG tube should be placed. Laparotomy is indicated with gross hematuria or blood from NG tube. The threshold for a DPL in these circumstances is an RBC of 5000/mm. Fluid lavaged from the Foley catheter, NG tube or chest tube also mandates exploration. All patients with peritoneal penetration who are not taken to surgery should be admitted for 24 hours of observation.
- e. If the wound is thoracoabdominal:
  - i. Obtain chest X-ray with wound markers to determine the presence of chest injury and to determine the relationship of the entry wound to the diaphragm.
  - ii. If wound could possibly have penetrated the diaphragm, consider DPL with threshold for the RBC count of 5000/mm.
- f. If the wound is posterior or flank:
  - i. Insert Foley catheter to determine the presence of hematuria.
  - ii. Obtain a triple-contrast CT scan to determine injury by retroperitoneal organs. Triple contrast means contrast administered IV, by mouth or by NG tube, and per rectum. Consideration can be given to placing a contrast-soaked sponge into the wound to help localize the injury.
- g. For pelvic wounds that may have traversed the rectum:
  - i. Perform anoscopy and sigmoidoscopy to determine the presence of a mucosal defect.

- ii. Consider diversion, drainage and rectal washout if injury is found.
- h. For all patients taken to surgery for exploratory laparotomy:
  - i. Once the decision to go to the OR is made, emergent cases scheduled by the trauma surgeon should be in OR within 30 minutes.
  - ii. Make sure the patient is typed and crossmatched for blood and it is immediately available.
  - iii. Administer prophylactic antibiotics for bowel flora.

**REFERENCES:**

- ❖ Deaconess Trauma Guideline Manual, EMPIRIC ANTIBIOTICS FOR TRAUMA PATIENTS AND CRITICAL CARE PATIENTS.
- ❖ Deaconess Trauma Guideline Manual, BLUNT ABDOMINAL TRAUMA.

<b>REVIEWED DATE</b>	<b>REVISED DATE</b>
JAN 05	JAN 08
JAN 06	
JAN 07	