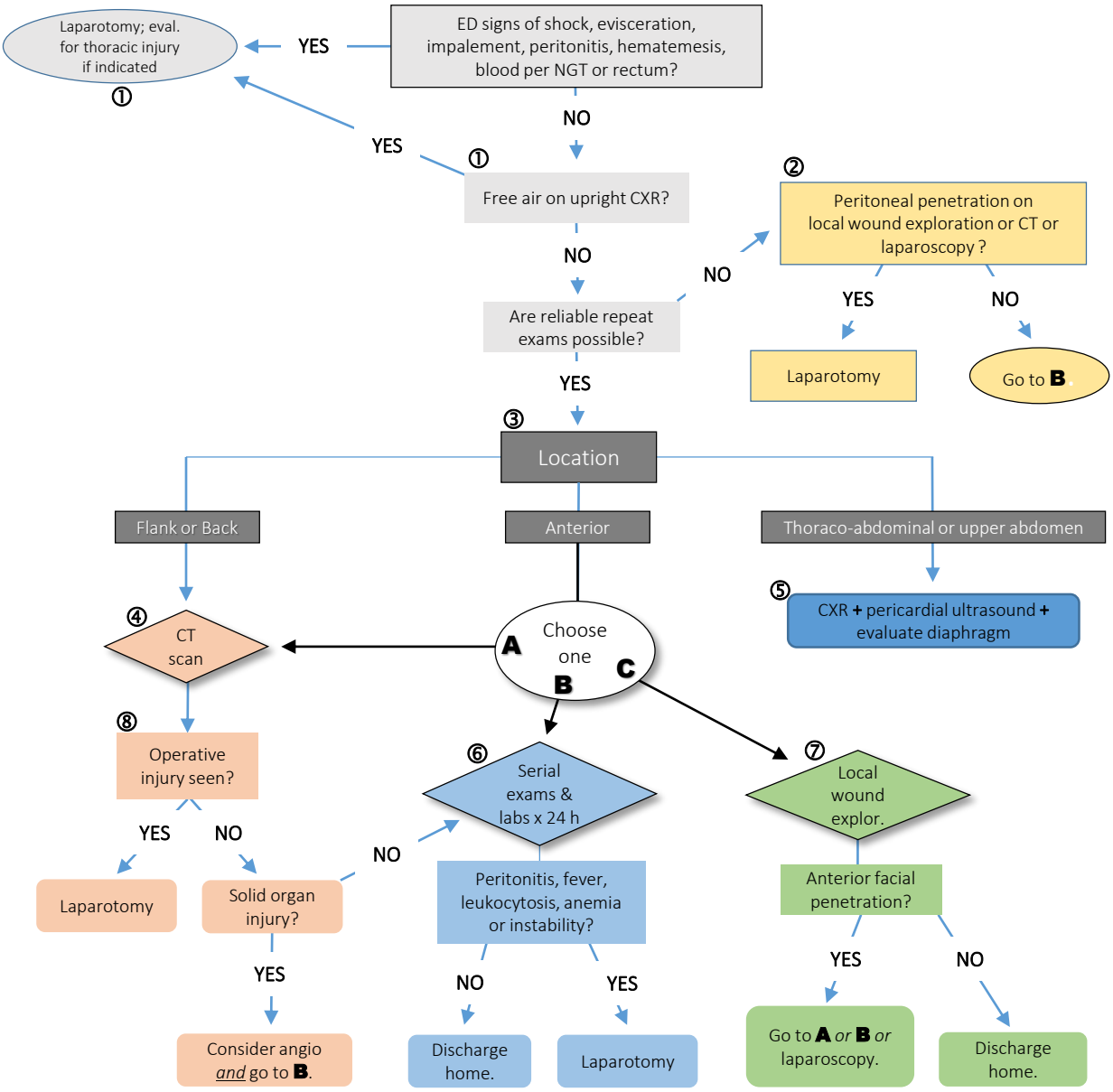
MANAGEMENT OF ABDOMINAL STAB WOUNDS



① Unstable patient with penetrating abdominal injury should undergo prompt laparotomy without further imaging studies beyond a portable CXR in the ED. Whenever possible obtain a CXR with the patient sitting up, because free intraperitoneal / sub-diaphragmatic air seen on CXR is generally an indication for laparotomy after a penetrating injury even in a stable patient.

② Pt who is severely intoxicated, intubated or who cannot reliably cooperate with an abdominal exam should undergo further diagnostic testing or procedures to determine the need for laparotomy. A GCS of 13 or higher is consider the threshold for pt reliability. Transiently intoxicated patients (ethanol) may be observed for a short period until they regain the capacity for serial abdominal examinations. Laparoscopy has not been shown to be a reliable tool in diagnosing all clinically significant abdominal injuries and should generally be followed by an exploratory laparotomy unless the surgeon is an expert laparoscopist.

③ Anterior abdomen = area form groin crease to costal margins and anterior to the anterior axillary lines. Thoraco-abdominal / upper abdomen = umbilicus to costal margins. Flank / back = area posterior to the anterior axillary lines.

④ Obtain fine cut CT scan using oral and IV contrast.

⑤ Injuries to the heart should be ruled out with prompt diagnostic transthoracic echocardiography or focused fine cut CT scanning to evaluate for the presences of a pericardial effusion. The FAST exam is not a definitive modality in the stable patient. The diaphragm, particularly on the left side, should be imaged either with laparoscopy or focused fine cut CT scanning with repeat delayed imaging. If a large left residual hemothorax persists despite adequate chest tube placement consider a diagnostic thoracoscopy for diaphragmatic evaluation and concomitant pleural lavage.

⑥ Serial examinations at short (2-3 hrs.) regular intervals, preferably by the same clinician, supplemented by close monitoring of vital signs and serial CBC (to follow hemoglobin and WBC counts). Development of peritonitis, sustained tachycardia or hypotension, fever, leukocytosis, or significant drop in hemoglobin level should prompt an abdominal exploration. If the 24 hr period of observation remains uneventful, the patient should be fed a full diet (no need to advance through liquids) and, if the food is tolerated, discharged home.

⑦ Determine if there has been posterior facial penetration by directly visualizing the wound tract. This will require local anesthetic and extension the margins of the wound a few cm in each direction to allow for clear exploration of the tract. Probing a wound with a finger, "Q-Tips" or hemostats is not sufficient and is discouraged. A clearly negative exploration (i.e. posterior fascia is seen to be intact) allows discharge of patient from the ED. A positive exploration should be followed by either diagnostic imaging (algorithm pathway **A**) or serial abdominal examinations (algorithm pathway **B**). Significant obesity, tangential tract, puncture wounds (i.e. ice pick) and multiple wounds (more than 2-3) are contraindications to this approach.

⑧ Direct signs of operative injury include: visualized hollow viscus injury, visualized diaphragm injury on left side, unexplained free fluid, free air, bowel wall thickening, mesenteric injury, vascular injury with active bleeding, and contrast extravasation (consider embolization if solid organ extravasation). Injury to solid organ without signs of active bleeding should be managed as if blunt solid organ injury.