

# TRAUMA CASE CONFERENCE

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## DISCUSSION

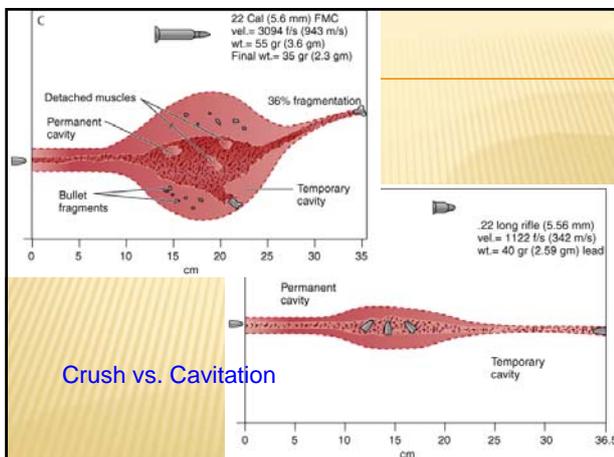
# Gun Shot Wound



## ABDOMINAL PENETRATING INJURY

- ✗ Gunshot vs. Stab wound
- ✗ Mortality up to 90%
- ✗ High energy
- ✗ Bullet mass, velocity, fragment
- ✗ Bullet caliber, yaw
- ✗ Tissue characteristics

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## BALLISTICS

- ✗ High velocity
  - + >610 m/second or >2000 feet/second
- ✗ Medium velocity
  - + 335 to 610 m/second or 1100 to 2000 feet/second
- ✗ Shotgun
  - + Most lethal : <2.7 meters or <3 yards
  - + It depends on the distance

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## THE COMMON LOCATION OF INJURY

- ✗ Liver
- ✗ Small bowel
- ✗ Stomach
- ✗ Colon
- ✗ Spleen
- ✗ Kidney
- ✗ Pancreas

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## HISTORY

- ✗ Number of shots heard
- ✗ Type of gun used
- ✗ Position of the patient when shot
- ✗ Distance of the patient from the gun

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## EVALUATION

- ✗ Completely undress the patient
- ✗ Search for the second "hole"
  - + Axilla, groin, perineum, scalp, or skin folds
  - + Log roll for the back exam
- ✗ Local wound exploration
  - + To evaluate the fascial injury
  - + Superficial or low-velocity wounds
  - + If the wound tract is clearly visualized
- ✗ Image study

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## IMAGE

- ✗ X-ray : to define the bullet tract
  - + Need 2 planes
  - + Not very useful when through-and-through wound
- ✗ CT scan :
  - + Only for hemodynamically stable patients
  - + Good sensitivity for solid organ injury
  - + IV + rectal + oral contrast (triple)
  - + Suitable for non-operative patients

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## OTHER DIAGNOSTIC TOOLS

- ✗ Ultrasound
  - + FAST
  - + No acites cannot rule out intraabdominal injury
- ✗ Diagnostic peritoneal lavage
  - + Positive if RBC >100000/HPF, WBC>500/HPF
  - + Non-specific
  - + Invasive

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## DIANOSTIC LAPAROSCOPY

- ✗ Identify peritoneal violation
- ✗ Drawbacks
  - + Need anesthesia
  - + Not usually well-visualized
  - + Inability to repair injury

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## MANAGEMENT

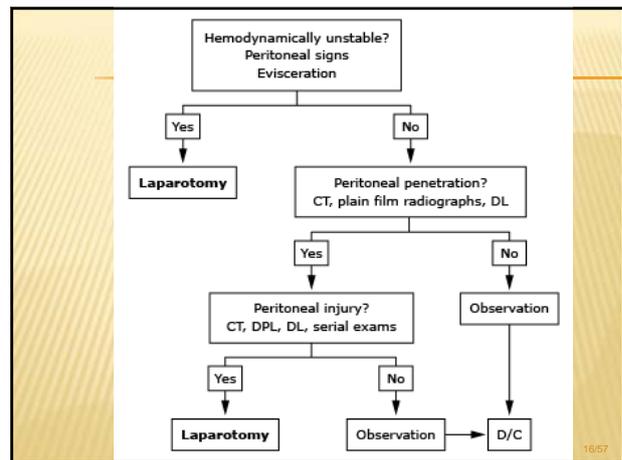
- ✗ Laparotomy
  - + Evisceration
  - + Hemodynamically unstable
  - + Peritonitis
- ✗ Peritoneal injury
  - + CT
  - + DPL
  - + Diagnostic laparoscopy

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## SELECTIVE NONOPERATIVE MANAGEMENT

- ✗ Only if we can frequently reassess the patient
- ✗ Afford rapid transferring patient to OR
- ✗ For high velocity injury, OBS at least 12 ~ 24 hrs if all exam were negative

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## EVIDENTIARY CONCERNS

- ✗ Do not cut through bullet holes or knife holes in clothing when removing it
- ✗ Take photographs before initiating wound treatment
- ✗ Do not describe wounds as entry or exit wounds
- ✗ Avoid injury from the sharp bullet jacket edge

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## OTHER ASSOCIATED PROBLEMS

- ✗ Gunshot fractures
  - + Delayed union or nonunion due to vascular injury
- ✗ Neural injury
  - + More common in extremity shotgun wound
- ✗ Thermal injury
- ✗ Lead poisoning
  - + Intra-articular, disk space



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### INLET VS. OUTLET

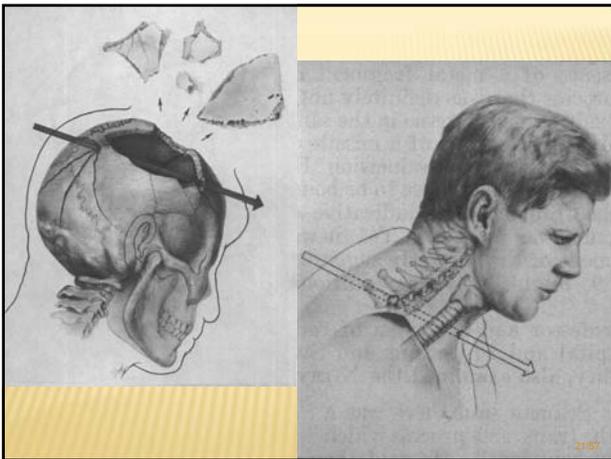


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### INLET VS. OUTLET



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Thanks for your listening !



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