MANAGEMENT OF PENETRATING RECTAL INJURIES
CASE SCENARIO #1

- 47M s/p single GSW to right buttock
- Entry, no exit
- Vitals: BP 112/83, HR 70
- No peritonitis
- DRE negative
WORKUP

- KUB: single retained bullet on contralateral side
- Cross table lateral: not informative
- CT scan: bullet enters medial R buttock and crosses into L ischiorectal space with gas & hemorrhage in ischiorectal fossa and deviation of levator ani to the R
- Flexible sigmoidoscopy: area of punctate mucosal hemorrhage, left lateral aspect, approximately 10cm from anal verge
CASE SCENARIO #2

- 15M s/p SW to lateral right buttock
- Vitals: BP 98/58, HR 94
- No peritoneal signs
- Negative DRE
WORKUP

- CT scan with rectal contrast: extravasation of rectal contrast into presacral space with focal discontinuity of right lateral rectal wall
OPERATIVE INTERVENTION

Both patients taken for diverting loop sigmoid colostomy
POSTOPERATIVE COURSE

- Patient #1: discharged home POD#7
  - Slow return of bowel function with constipation, otherwise uneventful
- Patient #2: discharged home POD#8
  - Slow return of bowel function with intermittent low grade fevers
  - CT A/P revealed presacral fluid, no collection
DISCUSSION

MANAGEMENT OF RECTAL INJURIES
MECHANISM

- Majority of rectal injuries result from penetrating trauma.
- Pelvic gunshot wounds should have trajectories through the intraperitoneal or extraperitoneal rectum.
- Gluteal gunshot wounds and stabbings may also produce rectal injury.
- Blunt trauma is an unusual cause but can occur with open pelvic fractures.
- Foreign bodies are also a cause of rectal perforation.
DIAGNOSIS

- **CLINICAL EXAMINATION**
- Injuries to the anterior and lateral walls of the upper 2/3 of rectum will most likely cause intraperitoneal perforation with peritonitis
- Posterior wall perforations of the upper 2/3 or perforations of the lower 1/3 are extraperitoneal and may not be symptomatic
- DRE to look for intraluminal blood or palpate a mucosal abnormality
DIAGNOSIS

- **RADIOGRAPHIC IMAGING**
- Plain pelvic films can help establish trajectory after marking the skin hole(s)
- Helical CT should be routine for suspected rectal perforation
  - Recent military data suggest CT may be only diagnostic modality needed
- Use of rectal contrast is helpful

DIAGNOSIS

- **SIGMOIDOSCOPY**
  - Essential diagnostic tool
  - Should be used if DRE or CT scan are suggestive but ambiguous
  - RS more sensitive than DRE
  - Intraluminal blood should be a reason for operation
    - Implies full-thickness injury
  - Can be therapeutic by allowing transanal repair of low rectal injuries or removal of foreign bodies

TREATMENT

Colostomy

Rectal Washout

Presacral Drainage
TREATMENT
Intraperitoneal injuries can be managed with primary repair

No evidence for extraperitoneal injuries on primary repair without colostomy

Transanal primary repairs are feasible

Fecal Diversion

- N = 92 patients with 118 rectal injuries (7 intraperitoneal, 59 extraperitoneal, 26 combined) over 4 years
- 2 EP injuries repaired
- None had presacral drainage or DRW
- 86 sigmoid loop colostomies
- Complications: 2 fistulas, 9 minor infections, no pelvic sepsis
- Therefore, EP injuries due to low-velocity trauma can be safely managed by fecal diversion alone

BUT IS IT NECESSARY?

- Isolated EP injuries may not require operative intervention at all.
- Must rule out IP injury and vigilantly monitor for signs of clinical deterioration.

ONE STEP FURTHER

- Do we need to do a colostomy at all?
- **Contrast enema** can confirm healing of rectal wounds by 10 days postinjury
- Radiologically cleared rectal wounds underwent same admission colostomy closure
  - No infection
  - Anal continence
- Reported 87.5% of patients without complications

COLOSTOMY CLOSURE

- Timing between one to six months
- Majority of even unrepaired rectal injuries is well healed in 7-10 days
- Type of colostomy defines need for a local incision versus a full laparotomy

MANAGEMENT ALGORITHM
AMERICAN ASSOCIATION FOR THE SURGERY OF TRAUMA

INJURY TO THE EXTRAPERITONEAL RECTUM

Upper third

Small (<25% of perimeter)
Transperitoneal 1° repair (loop colostomy may be added)

Large (25%)
Transperitoneal 1° repair with colostomy*

Middle third

Colostomy with/without 1° repair

Lower third

Transanal 1° repair with/without colostomy OR colostomy alone

*On selected cases colostomy alone (without 1° repair) may be adequate

Notes:
1. A loop colostomy is preferred over an end colostomy, whenever possible.
2. Rectal washout and presacral drainage are unnecessary in most cases.


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SUMMARY

- Intraperitoneal injuries can be repaired and treated like colonic injuries.
- Extraperitoneal injuries can be controversial and should be managed on a case by case basis.
  - Operative ensemble includes colostomy, presacral drainage, distal rectal washout, primary repair, watchful waiting.
REFERENCES