



Principles in Approaching Difficult Operative Situations

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Clinical Scenario

You are called in by the urology team during a robotic prostatectomy for a “small tear” in the anterior rectal wall. On the monitor, you see the pelvis filled with dark venous blood. With suctioning, the rectum appears significantly injured and the bleeding continues. The senior urologist tells you to try to fix it robotically and that “this guy will not accept a bag.”

Key Points

1. The initial assessment is critical. The surgeon must verify through their own examination what the real purpose of the consultation is and should determine the clinical status of the patient in order to decide on the best next steps in any given situation.
 - (a) Use a controlled, stepwise approach, just like starting with the ABCs in trauma. At the initial assessment, look at the whole patient: airway, breathing, circulation, disability, and exposure. How is your exposure?
 - (b) Take the time to assess the urgency of the situation prior to making your first move.
 - (c) Do not commit to an operation by performing an irreversible maneuver such as ligating a major vessel or performing a bowel resection without first assessing resectability and surveying the abdomen.
2. Ensure you have adequate exposure.
 - (a) In laparoscopic or robotic cases that require better visualization or exposure, take the time to insert additional trocars, as needed, or convert the minimally invasive surgical platform to an open procedure, if needed.
 - (b) In open cases, extend the existing operative incision as needed, insert an abdominal wall retractor, as deemed appropriate, and pack away the small bowel and other structures to obtain the ideal view of the region of interest.
 - (c) Ask for the retractors and equipment that you are comfortable using.
 - (d) Pay attention to positioning, using gravity to have the omentum, bowel, and viscera fall away from your field of intended view.
 - (e) Ensure that you feel comfortable with the exposure. If the requesting surgeon is robotic or laparoscopic and you feel the

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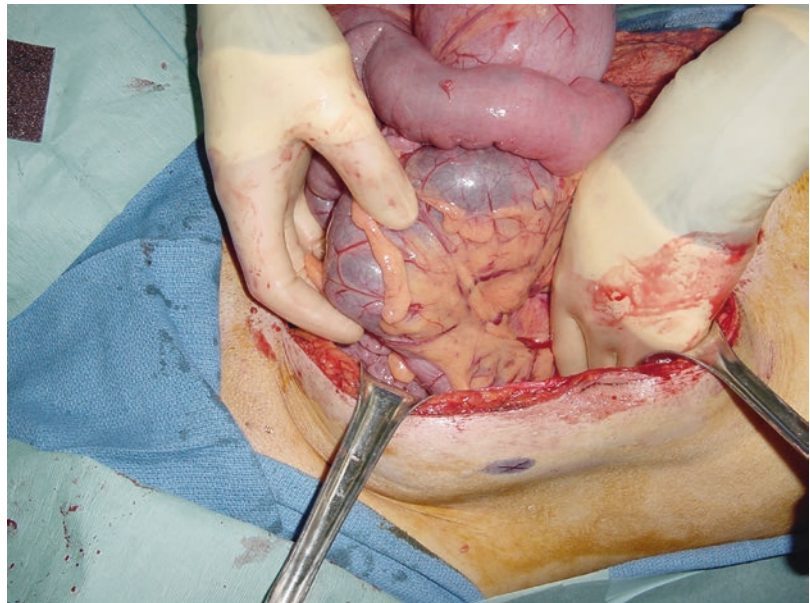
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- need to open to do what needs to be done, *do it!*
3. Damage control procedures may be required to temporize the situation.
 - (a) Pack the abdomen to stop bleeding.
 - (b) Oversee enterotomies and staple off unsalvageable portion of the bowel to control feculent spillage and stop ongoing contamination.
 - (c) Decompress fluid-filled, edematous, or obstructed bowel to facilitate dissection via a controlled enterotomy or colotomy in a segment of bowel that will, ideally, be resected (Fig. 2.1).
 - (d) Transfer to the intensive care unit, and resuscitate the patient before definitive surgery is attempted.
 - (e) Communicate with the critical care team the plan to optimize and return to the operating suite for definitive surgery, so all team members are aligned.
 4. Use your experience and sound judgment to do what is best for the patient.
 - (a) Keeping in mind the enemy of good is better, know when to bail out of the elective operation and move the patient to damage control or a resuscitation phase.
 - (b) Ask for additional help, if available, for insight into management and technique. In certain situations even students or trainees can provide invaluable retraction.

Operative Assessment

- 1 What is the stability of the patient?
 - (a) In your initial assessment, talk to the consulting surgeon as well as the anesthesiologist about the patient's fitness for exploration and surgical procedures.
 - (b) Take notice of the vital signs and if blood products or vasopressor medications are hanging or were given.
 - (c) Determine if the operating room is still the best place for the patient or if damage control measures should be undertaken and the patient transferred to intensive care for resuscitation, warming, etc.
- 2 Determine the location and extent of the injury.
 - (a) Understanding the mechanism of the injury can help determine if this is a tissue or vascular injury and can guide management.

Fig. 2.1 Dilated bowel



- (b) During a prostatectomy, the rectum is most commonly injured when developing the extraperitoneal plane between the prostate and rectum or when retracting the seminal vesicles anteriorly and incising Denonvilliers fascia to develop the plane between the prostate and the rectum for the anterior dissection.
- 3 Is the robotic approach the best approach?
- (a) Use the approach you are most comfortable with and can work most efficiently regardless of the current robotic setup.
- (b) If there is a need for better visualization, better retraction, direct pressure, or tactile sense, convert from a robotic approach to a laparoscopic, hand-assisted, or open approach, as needed.
- 4 Always do what's best for the patient.
- (a) While it may be reported that the patient does not want an ostomy, use your best surgical judgment, and perform the procedures necessary for the best patient outcome. A stoma can generally be reversed, but major complications may be permanent.
- (b) The risk of needing a diverting stoma may have been covered in the informed consent, but if it was not explicitly listed under the possible procedures, the consent often covers any procedure deemed necessary by the surgical team abating any medicolegal fears of performing a stoma. In this situation, it may be helpful to talk with the waiting family to update them and review your recommendation for fecal diversion at that time.
- (c) Document accordingly. Make sure to make note of who called you into the case, time in and out for your procedure, and discussions had with family members.
- (c) Pelvic retractors, such as a St. Marks or a Sweetheart (lighted retractors, if available), if making a lower midline or Pfannenstiel incision
- (d) Bookwalter retractor if making a midline laparotomy incision
- (e) Rigid proctoscope
- (f) Headlight
2. Exposure.
- (a) Consider making a low midline, full midline, or Pfannenstiel incision, as needed, to assess and manage the complication.
- (b) Put in additional ports, as needed, to help retract omentum, small bowel, or other organs (e.g., large uterus). Simply adding a 5 mm port can help tremendously.
3. Positioning.
- (a) Reverse Trendelenburg allows gravity to help move the small bowel out of the pelvis and can lower the hydrostatic pressure in the presacral veins.

Operative Techniques

1. Control the bleeding.
- Pack the pelvis with laparotomy pads. If needed, maintain the packs to let anesthesia catch up. In an unstable patient, this may be your first and last operative maneuver that day. In a stable patient, cycles of packing combined with irrigation and suctioning the irrigant will help clear the blood and clots from the field, localize the site of the injury, and highlight ongoing bleeding. With these initial maneuvers, you can determine if the bleeding is coming from the rectum itself or torn presacral veins (Fig. 2.2).
2. Assess the damage to the rectum.
- If the area and extent of the rectal injury are not immediately apparent after packing and controlling the bleeding in the pelvis, perform a rigid proctoscopy for an intraluminal view. The insufflation can help delineate the injury.
3. Repair the rectum or divert.
- For injuries to less than 50% of the rectal wall circumference, consider a primary repair.
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- ## Operative Checklist
1. Additional helpful equipment.
- (a) Long pelvic instrument tray
- (b) Long continuous sutures

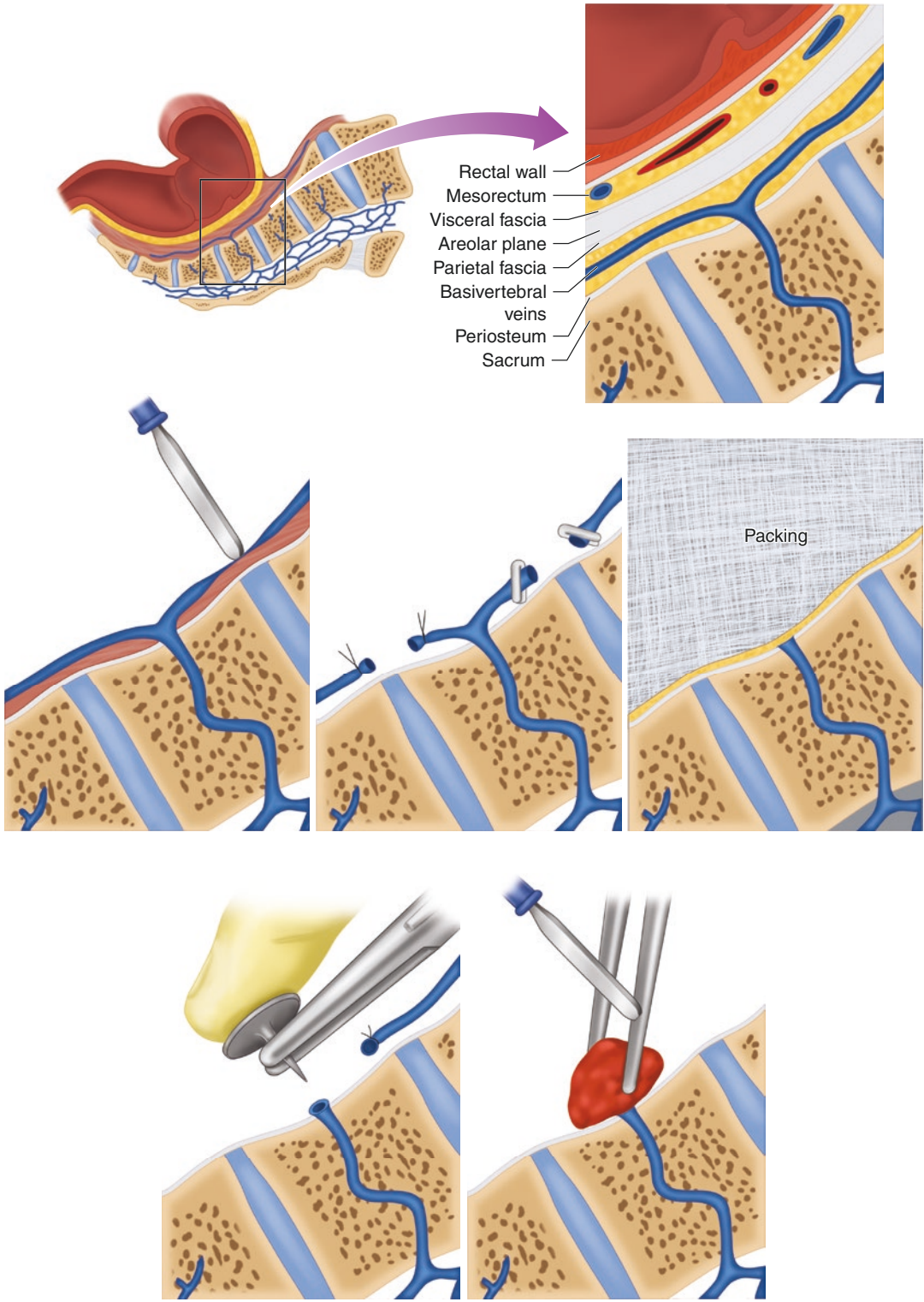


Fig. 2.2 Pelvic bleeding

Sharply freshen the edges of the injury, and place sutures in the edges to direct a transverse closure. This can be performed in one or two layers. For more extensive injuries, first determine if the patient's hemodynamic state and degree of bleeding/contamination are conducive to an anastomosis. If so, staple off the proximal and distal ends of the rectum, releasing the attachments up to the splenic flexure as needed for adequate length for a tension free anastomosis. The anastomosis can be fashioned using the anvil in the proximal limb and pairing it to an intraluminal stapler introduced into the rectum, in standard fashion. Consider proximal diversion if creating an anastomosis. If it is not the ideal situation to perform a repair or anastomosis, staple off the rectum distal to the injury, and divert the proximal limb as an end colostomy. Plan to return to the OR and restore continuity under better conditions.

Technical Pearls (Tips and Tricks)

1. If the patient is hemodynamically stable and it is appropriate in your surgical judgment to maintain a minimally invasive approach, it may aid your initial assessment—the pneumoperitoneum may help tamponade bleeding, and the camera may afford better visualization than what would be possible through an open approach.
2. In cases where there has been significant bleeding and gross contamination, defer more

complex techniques such as resection and primary anastomosis for a second procedure in a more controlled setting to reduce the risk of further complications.

3. In certain situations, consider performing a repair or anastomosis with a proximal diverting loop ileostomy. This will make the subsequent stoma reversal procedure easier.
4. Don't forget about a scope when needed to air leak test, assess viability of the bowel, or search for other pathology. A colonoscope can provide additional information than just what the initial situation was assumed to be.

Special Postoperative Care

1. If there is significant contamination, 24 hours of IV antibiotics should be considered.
2. While it is not our preference to leave drains in the pelvis routinely, if the rectum is repaired below the mid-rectum level or there is any concern for a urinary leak, leave a closed suction drain in the dependent portion behind the rectum.

Suggested Reading

1. Bailey HR, Isaacson TC. The intraoperative consult. In: Steele SR, Maykel JA, Champagne BJ, Orangio GR, editors. Complexities in colorectal surgery. New York: Springer Publ; 2014. p. 463–76.