

Clinical Correlation

Ano-rectal Region and Perineum

1. A 42 year old male presents with concerns of finding “bright red blood in the toilet.” He denies any pain, burning, itching or trauma to his rectum. Although this is the first time he has noted blood that reddened the water he has seen blood on his toilet paper before. He has never noted blood mixed with his stool. He denies any diarrhea but has been more constipated recently.

What is your differential diagnosis for this man’s symptoms?

If you were to perform an anoscopy on this patient, what landmark would help you differentiate the most likely causes of rectal bleeding?

2. A 62 year old female comes to your office with complaints of having “accidents.” She initially had episodes of urinary incontinence just when she would cough or sneeze but now is having episodes with daily activities. She denies any dysuria, urgency or frequency. She reports no abdominal or pelvic pain. She has full sensation in her perineum and has had no episodes of fecal incontinence. Her past medical history is only significant for early osteoarthritis. Her gynecological history is remarkable for two normal spontaneous vaginal deliveries and menopause at age 52 years.

What are some of the possible anatomic mechanisms that would be responsible for this patient’s symptoms?

What treatment might you initially prescribe to help with this condition?

3. A 58 year old homeless man is brought into the emergency department obtunded and febrile. The EMT’s accompanying him stated that he was complaining of groin pain prior to becoming unresponsive. On physical exam, the man appears ashen and does not respond to verbal stimuli. He is febrile at 40.1 C, tachycardic with a pulse of 122 and weak, blood pressure was 70 over palp, and respirations were 32 per minute. His perineum is erythematous, edematous and has areas of necrosis that extends on to his scrotum, which is massively enlarged.

What general process is occurring in this gentleman and what do you believe the appropriate treatment might be?

What might be the potential complications of this process given the anatomic location?

4. A 28 year old female presents to your office with complaints of abdominal pain and bloating. It began approximately three days prior and has been worsening in intensity. The pain is generalized, colicky in nature, non-radiating, without associated vomiting. She has been nauseated the last 24 hours. She reports no bowel movement for 6 days. She denies weight loss. She denies pregnancy but states that she hasn't had her menses for the last 6 months. On physical exam, the patient is a frail appearing young female with mild abdominal distention who was in mild distress, assuming the fetal position. The abdomen was tympanitic with scant bowel sounds that were occasionally high pitched. There were no peritoneal signs present.

What is your differential diagnosis for this patient's symptoms? What part of the physical exam do you want to perform at this point?

What are some of the potential anatomic mechanisms for constipation/obstipation?

5. A 32 year old very distraught female comes to your office with complaints of fecal incontinence. Every since the delivery of her second child she has noted that her ability to control her bowel movements has been compromised. On pelvic exam, she has normal sensation to the perineum and associated structures. No rectocele is present. However, her rectal exam displays poor anal sphincter tone.

What may have been the etiology of this patient's stool incontinence? What anatomic structures were likely damaged in this process?

What might be the potential treatment(s) for this patient's condition and potential complications?

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Answers

1. The differential diagnosis for “painless rectal bleeding” includes: hemorrhoids (internal more than external), ischemic colitis, diverticular bleeding, arteriovenous malformations, colitis, polyps, and malignancies. The most likely diagnosis in this age group is ***internal hemorrhoids***.

Internal hemorrhoids are located in the submucosal space above the anal valves, proximal to the pectinate (dentate) line. They arise from the internal rectal venous plexus, which drains into the middle and superior rectal veins, and to the inferior mesenteric vein. When they enlarge, they are usually not painful since they are innervated by autonomic nerves. There can be uncomfortable with erosion of the mucosal surface, prolapse through the anus or when thrombosis and/or infection occurs.

External hemorrhoids arise from the inferior (or external) rectal venous plexus which drains into inferior rectal veins, to the internal pudendal veins, to the internal iliac veins. They are below the dentate line and when enlarged are often very painful, owing to their somatic nerve innervation (inferior rectal branch of the pudendal nerve). They are often bluish in appearance and occur at the level of the anal sphincter causing spasm.

All hemorrhoids are worsened by increased hydrostatic pressure within the portal venous system, as in: pregnancy, valsalva maneuvers (passing stool, coughing, weight lifting), and cirrhosis.

2. Urinary continence in women is controlled by the intrinsic sphincter urethra muscle, the compressor urethral muscles and the sphincter urethrovaginalis. The majority of the urethra, before it passes through the urogenital diaphragm, is imbedded in the anterior vaginal wall.

Stress incontinence is due to either failure of the intrinsic sphincter urethra or more commonly urethral hypermobility. The latter can occur in conjunction with a traumatic vaginal delivery, age, and estrogen deficiency.

Initial treatment includes strengthening of the levator muscles of the vagina and the deep muscles of the perineum (urogenital diaphragm). This may be accomplished by utilizing Kegel exercises and hormone replacement therapy (systemic or topical creams). Surgery is an option if conservative measures fail.

Other types of urinary incontinence in women include: overactive detrusor muscle and overflow incontinence.

3. The gentleman has an infection of the perineum and is currently in septic shock. He needs fluid resuscitation, broad spectrum antibiotics, and surgical consultation for

debridement. This condition is called “*Fournier’s gangrene.*” It is a polymicrobial infection that begins by penetration of the rectal or urethral mucous membranes and rapidly advances along the fascial planes causing infection, necrosis and massive tissue destruction. It is a surgical emergency.

An infection may enter the potential space between the superficial penile fascia or Dartos fascia and the deep penile fascia or Buck’s fascia. It may extend down the scrotum by Dartos f. and posteriorly to the superficial perineal fascia (Colle’s) where it enters the superficial perineal space. The deep perineal fascia and the perineal membrane are deep to the superficial fascia and define the fascial planes. The continuation of the superficial layers anteriorly may extend up the abdominal wall as the membranous layer of the anterior superficial fascia. The bacteria have access to all the structures relating to these fascial spaces, including the muscles, nerves, vessels, and genitals of the perineum.

4. Differential diagnosis would include: severe constipation, obstipation, bowel obstruction, volvulus, ileus, and all of the etiologies that can lead to these conditions. A rectal exam is a must!

Constipation is the persistent, difficult, infrequent, or seemingly incomplete defecation..... but remember “one person’s constipation is another person’s diarrhea,” meaning that passage of stool is very variable. The causes include: mechanical obstruction, anal sphincter spasm, delayed transit time, pelvic floor dysfunction, medical conditions (hypothyroidism, hypercalcemia, irritable bowel syndrome, pregnancy, depression, connective tissue diseases, eating disorders) neurologic conditions (spinal cord injuries, Hirshsprung’s disease, multiple sclerosis), and medications (calcium channel anti-hypertensives, narcotics, diuretics).

Melanosis coli is a result of anthraquinone-containing laxatives (e.g., senna compounds). It is diagnosed at endoscopy by the darkened appearance of the colonic mucosa. In its extreme it can loss of colonic tone and dilation of the colon (similar to megacolon seen in Hirshsprung’s disease).

5. This patient underwent an *episiotomy* for her vaginal delivery of her child. This is a planned incision to allow passage of the baby. An incision is made at the midpoint of the posterior margin of the introitus, bisecting the perineal body (junction of the bulbospongiosus and the superficial transverse perineal muscles. If the perineal body is torn or the tear extends into the external anal sphincter muscle then the repair may not be complete and therefore the pelvic floor and resulting pelvic organs will lose support. Also, the anal sphincter repair may result in difficult passage of stool (too tight) or stool leakage and or incontinence due to excessive relaxation or loss of muscle tone.