The Title of Chapter: Digital rectal examination

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1. **The goal of this chapter:**
A digital rectal examination is indicated as part of a full physical examination and is often incorporated in a focused urologic, gynecologic, gastrointestinal, and neurologic examination. In the chapter the anatomical basics, and indication and techniques of rectum, anus and prostate examination, the techniques and complications of rectal digital examination are reviewed. Furthermore the basic principles and general rules will be discussed.

2. **Elements/Terms/Definitions**

**A digital rectal examination (DRE)**
A digital (finger) rectal examination is an important, direct examination of the rectum and nearby organs, including the anal canal, prostate and bladder.

**Indication of digital rectal examination**
A digital rectal examination is indicated as part of a full physical examination. Disease processes that may be investigated with a digital rectal examination include, but are not limited to, the following:
1) Bleeding of lower gastrointestinal tract
2) Anal pain and pruritus
3) Hemorrhoids
4) Prostatitis
5) Prostate cancer
6) Benign prostatic hyperplasia
7) Anal and rectal cancers
8) Anal condyloma
9) Constipation
10) Fecal incontinence
11) Anal fissures
12) Inflammatory bowel disease
13) Neurologic deficits

**Contraindication of digital rectal examination**
Although there are no circumstances in which a digital rectal examination is overtly contraindicated, caution should be exercised in examining infants and young children, and vigorous manipulation, specifically of the prostate, should be avoided in severely neutropenic patients and patients with prostatic abscesses or prostatitis. In such cases, the procedure should be postponed or performed under general or spinal anesthesia.

**Equipment needed for digital rectal examination**
The following is a list of the equipment required to perform digital rectal examination:
- Lubricant
- Gloves
- Topical anesthetic
- Paper wad
- Towels
Personnel required for rectal digital examination
One person (doctor, nurse) can successfully perform the digital rectal examination. However, the assistance of a second person is useful for decrease fears and anxieties of patients in this intimate situation.

Anatomical basis of digital rectal examination
The rectum is the final straight portion of the large intestine. The anus and anal canal constitute the terminal 3.5 cm of the gastrointestinal tract. The anal canal is oriented anteriorly to the anorectal ring, where it joins the rectum, a 15-cm structure that curves posterosuperiorly and lies in the sacral hollow. (Figure 19-1).

Figure 19-1. Anatomy of rectosigmoid colon. A. Posterior view B. Side view.

Patient preparation for digital rectal examination
The procedure must always be explained in detail to the patient, and consent must be obtained prior to any exam. You have to explain that the procedure will be unpleasant and uncomfortable, but not painful, is helpful.

Patient positioning for digital rectal examination
The digital rectal examination can be performed in one of the three standard positions:

1) Left lateral decubitus position, with knees drawn up and buttocks on side of bed or gurney.
2) Kneeling on bed, with head between arms, supported by a pillow.
3) Jackknife position (standard proctosigmoidoscopy examining table) (Figure 19-2).
The procedure of digital rectal examination in female patient

1) Collect all equipment.
2) Place the patient in one of the position described above.
3) Before inserting the finger, make a complete examination of the perianal skin and the anal verge. You can realize different skin abnormalities: inflammation, eczema, external hemorrhoids, and fistulas, etc.
4) Using a gloved, lubricated finger (forefinger or middle finger), perform a thorough digital examination of the anus and lower rectum. Spread the patient's buttocks and anus, gently insert a gloved, lubricated finger through the anal sphincter, and rotate the finger 180 degrees to examine the entire rectal canal.
5) An examination gently begins to dilate the anal sphincters.
6) As your finger enters, make note if you hit any resistance (stool, tumor).
7) By gently rotating your hand, you can use the pad of your finger to feel to the left, right and then directly backwards (i.e. towards yourself) and along the sacrum. Make note of any irregularities/masses.
8) Orient your finger so that it is directed anteriorly (i.e. toward the patient's umbilicus). It should now be resting on the prostate gland, which is palpated through the wall of the rectum. The prostate has two lobes with a cleft running between them. Normal prostatic tissue feels more or less like the tip of your nose. Anything firmer is suspicious for malignancy, and any pain on palpation is suggestive of prostatic infection.
9) You have to assess the sphincter tone. You can further assess external sphincter tone by asking the patient to try to hold on to your finger with their rectum, allowing you to feel the contraction of this muscle.
10) Exam of the stool. There is usually some stool in the ampulla that will coat your finger at the end of the exam. Inspect it after you withdraw your hand, looking for red or digested blood. Take the stool guiac card. The control will turn blue, the color indicating hidden hemoglobin.
Potential complication of digital rectal examination

1) Bleeding
2) Damage to the anal and rectal mucosa
3) Bacteriaemia, the physician should be aware that transient bacteremia has been known to occur during rectal examination.

Follow-up after digital rectal examination

1) The patient should be informed of all findings.
2) A small amount of bleeding is not unusual.
3. **Self assessment questions / answers**

1. **Question:**
Which are the indications of digital rectal examination?

**Answer:**
1) Bleeding of lower gastrointestinal tract
2) Anal pain and pruritus
3) Hemorrhoids
4) Prostatitis
5) Prostate cancer
6) Benign prostatic hyperplasia
7) Anal and rectal cancers
8) Anal condyloma
9) Constipation
10) Fecal incontinence
11) Anal fissures
12) Inflammatory bowel disease
13) Neurologic deficits

2. **Question**
How is the patient positioned for digital rectal examination?

**Answer**
1 Left lateral decubitus position, with knees drawn up and buttocks on side of bed.
2 Kneeling on bed, with head between arms, supported by a pillow.
3 Jacknife position.

4. **Case reports in connection with digital rectal examination**

Case 1
A 70-year-old man was admitted to hospital because of rectal discomfort and pain with chills and fever.

**Question**
What kind of abnormalities do you look for? Write down at least 5 of them!

**Answer:**
1) Look at the perianal area. Make note of any skin abnormalities, bleeding sites, fissures or hemorrhoids.
2) Assessment of rectal tone.
3) Any pain on palpation.
4) In the rectal ampulla: empty, stool
5) Any resistance (tumor, prostate, etc)
6) Stool abnormality
Case 2
A 56-year-old multipara was examined because of fecal incontinence. During rectal examination we can finger an „cauliflower-like” mass in the anal ampulla.

**Question**
What is the diagnosis?

**Answer**
This is a potential carcinoma.

Case 3
A 87-year-old male patient was examined because of urinary blockade.

**Question**
What disease can be diagnosed with digital rectal examination?

**Answer**
Prostatic hyperplasia or malignant tumor.

Case 4
A 34-year-old patient was admitted to the gastroenterology unit because of change in bowel habit. The staff physician wants to perform a digital rectal examination.

**Question**
What kind of equipment is need to perform rectal examination?

**Answer**
1. Lubricant
2. Gloves
3. Topical anesthetic
4. Paper wad
5. Towels

Case 5
A 43-year-old patient was sent by general practitioner to the specialist of internal medicine because of fever, painful defecation and purulent stool.

**Question**
How do we perform the rectal digital examination?

**Answer**
The procedure should be postponed or performed under general or spinal anesthesia.

5. **References:**


6. Requirements – Digital rectal examination

The instructor’s role
- The practice is designed for students to perform the digital rectal examination techniques several times in their own hands.
- The instructor should expect from students the theoretical knowledge for practice. The practice does not serve the transfer of theoretical knowledge.

Specific tasks
- Description of equipment need for digital rectal examination
- Description of personnel requirements for digital rectal examination
- Demonstration of the methods of digital rectal examination
- Supervision of the digital rectal examination carried out by students and correction of failures.
- Reviewing the video recording made of the practice with students, and the analysis of each case.

The student’s role
- The student should prepare for the practice according to the best of his knowledge.
- The practice serves testing and exercise of digital rectal examination.

Specific tasks:
- Carry out digital rectal examination several times on phantom device
- Reviewing the video recording made of the practice with the instructor, analysis of each cases.
- It is recommended to carry out all the techniques several times to acquire necessary experience.

7. Knowledge tests

Simple choice true/false
Encircle the T or F if the statement is true or false

1. T F In patient with inflammation of anal region, you can exam with digital rectal examination of the sphincter tone
2. T F The equipment need to collect for digital rectal examination: lubricant, gloves, topical anesthetic, paper wad, towels.
3. T F In patients with perianal and anal inflammation the digital rectal examination is contraindicated, or the procedure should be performed under general or spinal anesthesia.
4. T F The digital rectal examination doesn’t indicate in patients with anal pruritus.

Multiple choices
Encircle the true statement
5. Encircle contain of final findings of digital rectal examination: (9/9).
   1) Abnormalities of perianal skin,
   2) External hemorrhoids,
   3) Anal sphincter tone,
   4) The contain of rectal ampulla,
   5) Abnormal resistance in the ampulla,
   6) Abnormal pain in the ampulla,
   7) Prostate size,
   8) Stool on the gloves,
   9) Stool guiac test.

6. Which of the following does not belong to the possible complication of digital rectal examination? (simple choice)
   1) Bleeding
   2) Fissure
   3) Pain,
   4) Abscess
   5) Bacteraemia

7. In what patient’s position is the digital rectal examination performed? (multiple choice)
   1) Left lateral decubitus position, with knees drawn up and buttocks on side of bed or gurney.
   2) Kneeling on bed, with head between arms, supported by a pillow.
   3) Jacknife position (standard proctosigmoidoscopy examining table).

8. The statement are true, except one
   1) The digital rectal examination can not be performed if the patient is kneeling on bed, with head between arms, supported by a pillow.
   2) The digital rectal examination is indicated in patients with rectal bleeding and anal pain.
   3) In certain circumstances, the tissues of anal and perianal inflammation are so serious, that the introduction of the finger causes intensive pain in this region, therefore the digital rectal examination therefore is contraindicated.
   4) A digital rectal examination is a direct examination of the rectum and the prostate in male patients via rectum.
   5) The following is a list of the equipment required to perform digital rectal examination: lubricant, gloves, topical anesthetic, paper wad, and towels
   6) During inspection you can realize different skin abnormalities: inflammation, eczema, external hemorrhoids, and fistulas.
   7) A rectal examination is one of the most important clinical examinations in urology as well. You can investigate the prostate and seminal vesicles.
9. Settle the statements in chronologic order with mark of the serial number

A. You have to assess the sphincter tone. This can be done either at the beginning or the end of the examination. There is a certain subjective tightness that you will notice when you enter the rectum with your finger. (9)
B. Spread the patient’s buttocks and anus, gently insert a gloved, lubricated finger through the anal sphincter. (4).
C. As your finger enters, make note if you hit any resistance. By gently rotating your hand, you can use the pad of your finger to feel to the left, right and then directly backwards (i.e. towards yourself) and along the sacrum. Make note of any irregularities/masses. (7)
D. Place the patient in one of the position described above. (2)
E. Exam of the stool. There is usually some stool in the ampulla that will coat your finger at the end of the exam. Inspect it after you withdraw your hand, looking for red or digested blood. Take the stool guiac card. (10)
F. Before inserting the finger, make a complete examination of the perianal skin and the anal verge. (3)
G. Orient your finger so that it is directed anteriorly (i.e. toward the patient’s umbilicus). It should now be resting on the prostate gland, which is palpated through the wall of the rectum. (8)
H. An examination gently begins to dilate the anal sphincters. (5)
I. Assemble all equipment. (1)
J. Rotate the finger 180 degrees to examine the entire rectal canal. (6)

10. Match the letters with the appropriate numbers

A. Complication 1. Prostate
B. Women 2. Pain
C. Man 3. Douglas space
D. Indication 4. Search for tumor
E. Glove finger 5. Guiac test
Keys: A2, B3, C1, D4, E5

Relationship-Analysis
Questions Statements and Justification

11. In the case of perianal and anal inflammation, the test has to be postponed, and spinal anesthesia should be performed, since the introduction of the finger can cause severe pain (A).
12. The digital rectal examination can be performed in left lateral decubitus position with knees drawn up, because other positions are less suitable to establish the correct diagnosis (B).
13. In case of pruritus a digital rectal examination is not acceptable, because it can be caused by a skin disease. (D).
14. The anal canal is oriented anteriorly to the anorectal ring, where it joins the rectum, a 15-cm structure that curves posterosuperiorly and lies in the sacral hollow, so the digital rectal examination is not justified (C).
15. If the skin around the anus without any abnormalities or external haemorrhoids see no justification for a digital rectal examination, because surely a bloody stool causes this abnormalities. (E)
8. Suggested reading

Chesnutt MS, Dewar TN, Locksley RM: Office and bedside procedures. Appleton & Lange, 1992 (page 284-293)