MENNONITE COLLEGE OF NURSING
AT
ILLINOIS STATE UNIVERSITY
Diagnostic Reasoning for Advanced Practice Nursing 431

MODULE: ABDOMEN

OBJECTIVES:

Upon completion of this module, the student will be able to:
1. Identify the normal anatomical structures of the abdomen.
2. Perform and complete abnormal exam.
3. Describe the purpose of abdominal branching exams and perform the maneuver correctly.
5. Describe anatomical changes associated with aging and pregnancy.

REQUIRED READINGS:


PRACTICE:

Equipment needed: water soluble pen
stethoscope
warm hands
tangential lighting (ideal)
tape measure
1. Define or describe:
   a. ascites
   b. constipation
   c. diarhea
   d. dysphagia
   e. hematemesis
   f. melena
   g. hematochezia
   h. tenesmus
   i. borborygmi
   j. bruits
   k. linea alba
   l. hernia
   m. peristalsis
   n. striae
   o. peritonitis
   p. costovertebral angle
   q. hepatomegaly
   r. splenomegaly

2. List the cardinal symptoms of the GI system.

3. What key past medical history should you obtain in a patient with a GI complaint?

4. Differentiate between visceral, parietal, and referred pain.

5. List the order of the examination of the abdomen.

6. State 2 ways to promote muscle relaxation of the abdomen.

7. Name the 4 quadrants of the abdomen and the internal structural organs located in each.

8. List 4 terms that may be used to describe the size and shape of the abdomen.

9. How can the rectus abdominis muscle be identified during the exam of the abdomen?

10. List findings that should be noted in the inspection of the skin of the abdomen.

11. Differentiate male vs. female public hair distribution.

12. In arterial insufficiency of the legs where should you listen for bruits?

13. What is the predominant percussion note in the abdomen?
14. What is the “normal” liver span in the MCL in the adult?

15. Describe a method to screen for splenic enlargement without palpating the abdomen.

16. When should the rebound maneuver be performed? What does a positive test suggest?

17. Describe a method for checking for liver tenderness when the liver is not palpable.

18. Which kidney is rarely palpable?

19. List 2 tests to check for possible ascites.

20. How would you distinguish an abdominal mass from a mass in the abdominal wall using physical assessment techniques?

21. In a patient with cc: ‘abdominal pain,’ which body systems would you examine?

22. Chart the exam of the normal abdomen.

23. What are the major changes associated with aging in the gastrointestinal system?
G.I. SYSTEM ASSESSMENT

Guidelines for Collection of Subjective & Objective Data Base

I. SUBJECTIVE DATA BASE

A. Chief complaint, noting duration

B. Symptom Analysis

1. onset, characteristics, location, radiation
2. progression, chronology of symptoms: what happened? first? next?
3. Possible precipitating factor(s)? recent travel? diet change?
4. Specific aggravating factors:
   a. position; especially recumbent vs. erect
   b. emotions/stress
   c. movement of back and leg
   d. food: relationship to meals (before or after); type of food (fatty, spicy, carbohydrates, dairy)
   e. alcohol, coffee, cigarettes
   f. menses
5. specific relieving factors
   a. position
   b. rest vs. exercise
   c. movement
   d. eating vs. fasting
   e. meds--antacids, anticholinergics
   f. if present, does vomiting, BM, belching relieve pain?
6. Specific positive and negative associated symptoms:
   a. systemic: fever, malaise, fatigue, H/A, chills, weight change—trying to lose?
   b. cardinal symptoms of G.I. system: change in appetite, indigestion/heartburn, nausea vomiting, (hematemesis), bloating, change in bowel habits, (diarrhea, constipation, tenesmus, hematochezia, melena, pain w. BM, rectal discharge; anal pain/itch, jaundice, pruritis, abdominal pain (visceral, somatic, referred, neurogenic, metabolic)
   c. similar structure: GU system: dysuria, frequency, hematuria, dark urine
   d. Female: LMP, relation to menses, possible pregnancy, vaginal discharge, dyspareunia abnormal vag. Bleeding
   e. adjacent structure: pulmonary (cough, sputum), cardiovascular (chest pain). back pain neurologic (paresthesia, autonomic).
7. Anyone else in family sick? Other associates sick? (R/O food poisoning)

C. PMH:

1. G.I. hemorrhoids, hernias (including hiatal, rectal bleeding, ulcers, colitis, liver disease, GB disease, gall stones, obesity, h/o similar illness.
2. GU: kidney problems, UTI’s kidney stones, PID, recent pregnancies, vaginites, IUD, endometriosis.
3. diabetes, cancer, pneumonia/lung disease, angina
4. Abdominal/chest trauma
5. abdominal/chest surgeries--was appendix removed?
6. past x-ray studies: barium enema, UGI, GB series, ultrasound.

D. Medications;

1. aspirin
2. anticoagulants
3. steroids
4. indocin
5. anticholinergics
6. antacids
7. birth control pills

E. Allergies

F. Family history
   1. GI illness: colitis, ulcers, enteritis
   2. alcoholism: cardiovascular, pulmonary, obesity or other endocrine disorders

G. Personal Profile
   1. Usual daily diet-recent changes
   2. usual daily pattern of BM--recent changes
   3. Stress assessment--life changes, stresses in work, family relationships, school etc.
   4. routine relaxation
   5. source of support: emotional, financial, assistance
   6. Health habits: past & present smoking history: coffee, tea, other stimulants, ETOH intake (past/present)

H. Cultural Assessment
   1. What do you think causes this problem?
   2. What are your expectations of this visit?
   3. What other alternative interventions have you/do you use?

II. OBJECTIVE DATA

A. General Survey (every client)
   1. demographic data
   2. overall state of health
   3. signs of abdominal distress: position, ability to ambulate, pallor, sweating, watch during interview for signs of anxiety, unwillingness to move, splinting
   4. restlessness vs. lying still
   5. signs of emotional distress
   6. V.S. (postural)
   7. weight/height--appropriateness
   8. skin: rashes, bruising, jaundice, spider angiomas, striae, scars, caput medusae, telangectasia

B. G.I system
   1. Auscultation
      a. bowel sounds increase, decrease, absent, rushes
      b. bruits (aorta, renal, iliac, femoral arteries
      c. peritoneal friction rub
      d. FHT's
   2. Inspection
      a. contour
      b. symmetry
      c. movements--do they cause pain?
      d. visible peristalsis
   3. Percussion
      a. all 4 quadrants (distention, fluid, gas, masses)
      b. liver
      c. spleen
      d. bladder
   4. Palpation
      a. light/deep palpation all 4 quadrants (pain, spasm)
      b. organs (size, location, mobility, and quality
      c. masses, fluids
   5. anus and rectal exam. check guiac
6. back
   a. shape of flanks
   b. CVA tenderness

C. GU exam (male or female)

D. Complete back exam (dependent on history)

E. Chest exam (dependent on history)

F. Heart exam (dependent on history)

G. Special maneuvers (dependent on history)
   1. rebound
   2. Psoas test
   3. tests for ascites
   4. Obturator test
   5. Murphy’s sign

H. Special tests (dependent on history)
   1. x-rays
      a. plain films
      b. barious studies
   2. gastric analysis & cytology
   3. ultrasound vs. cat scans
   4. endoscopy
   5. peritoneal tap/lavage
   6. diagnostic laparoscopy
Through histories and examinations of multiple systems are necessary due to increased risk of pulmonary and cardiovascular disease in the elderly as well as to the sometimes deceptively benign onset of serious illness.

The loss of muscle and the re-distribution of fat presents as truncal obesity in many elderly individuals. The abdomen may be pendulous and palpation of organs or masses difficult.

Anatomic and physiological changes in the aged gut are not well documented. However, there is majority consensus on some of the changes that do occur. Esophageal and intestinal motility and blood flow do appear to slow. Response to rectal fullness may also be blunted, but this is most likely due to laxative abuse and chronic blunting of the defecation reflex. Peristaltic wave response to hunger is also decreased.

Salivary secretion of ptyalin decreases as does total gastric acid. Some degree of atrophic gastritis may develop and, if severe, can cause anemias to occur. Trypsin, pepsin, amylase, and lipase may also be decreased, but appear to be capable of handling normal carbohydrate, protein and fat intake. Gastric pH changes may affect the solubility of some drugs.

Absorption in the gastrointestinal tract is altered as a result of changes in the absorbing surface, decreased mucous secretion, altered blood flow and decreased peristalsis. However, it is felt by most investigators that with appropriate intake of nutrients, absorption is probably adequate. The exceptions to this may be calcium, iron, and B vitamins, which depend on gastric and small intestine activity. Deficiencies of these are not uncommon in the elderly but may be a result of poor dietary intake, in addition to gastrointestinal changes.

Constipation, a common complaint of the elderly, is usually functional in nature and a result of multiple factors. Gastrointestinal changes alone should not cause this to occur. It is usually the combined result of poor dietary intake, lack of bulk in the diet, medication, inactivity, laxative abuse, improper mastication of foods, and loss of abdominal musculature. Constipation can be a sign of a serious problem and should be thoroughly evaluated.

Screening tests for occult blood in the stool are essential as the incidence of intestinal and rectal cancer increases with age.

Hiatal hernia, choledocholithiasis, and diverticula are not uncommon in the aged individual, but most frequently are asymptomatic and discovered by chance. The increasing incidence of these occurring with age has led some investigators to speculate that these are changes that occur as a result of the aging process.

The liver decreases in weight and may be palpable below the costal margin. The span should be normal however. No appreciable change in liver function has been noted, although BSP retention is increased. Total serum proteins remain at the lower limits of normal, and serum albumin decreases while globulin increases.

There is an increase in pancreatic adipose tissue, but this does not affect pancreatic response to fats, glucose, protein, or carbohydrates. Glucose tolerance tests are not infrequently abnormal, with a delayed hyperglycemic phase and a more persistent hypoglycemic response. This appears to be related more to a peripheral lack of sensitivity to insulin with subsequent increased and prolonged insulin secretion, rather than a decline in insulin production.
In general, although changes do occur in the gastrointestinal tract, it is still performing adequately and functionally. These functional changes should be asymptomatic in the majority of situations.

<table>
<thead>
<tr>
<th>Subjective complaints</th>
<th>Objective findings</th>
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<tbody>
<tr>
<td>loss of appetite</td>
<td>pendulous abdomen</td>
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<td>difficulty chewing</td>
<td>palpable liver edge (smooth, span less than 11 cm.)</td>
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<tr>
<td>constipation/ frequent laxative use</td>
<td>altered A/G/ ratio (3.25/3.75)</td>
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<tr>
<td>flabby abdomen</td>
<td>abnormal BSP retention</td>
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<td>sweating and weakness after a high CHO meal</td>
<td>increased gastric pH</td>
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<tr>
<td>discomfort after a meal high in fat (lipase I)</td>
<td>x-ray evidence of hiatal hernia, diverticula and choledolithiasis abnormal GTT (elevated &gt; 2 hrs. followed by prolonged glucose level less than 90 mg%</td>
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** Branching Exam Procedure**

<table>
<thead>
<tr>
<th>COMPONENT ACTIVITIES</th>
<th>DONE</th>
<th>NOT DONE</th>
<th>COMMENTS</th>
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<tbody>
<tr>
<td><strong>INSPECTION</strong></td>
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<tr>
<td>1. Inspect skin (scars, rashes, striae, venous distension)</td>
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<td>2. Observe umbilicus</td>
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<td>3. Inspect tangentially contour/symmetry of abdomen</td>
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<td>4. Observe for masses/organs with deep inspiration</td>
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<td>5. Observe for diastasis recti and hernia(s) as client changes position</td>
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<td><strong>AUSCULTATION</strong></td>
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<td>1. Listen for bruits with bell:</td>
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<td>a. Aorta - epigastrum</td>
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<td>b. R &amp; L renals - upper quads</td>
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<td>c. R &amp; L iliacs - lower quads</td>
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<td>d. Femorals (palpate first)</td>
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<td>2. If bowel sounds are not heard with bell, listen in all 4 quadrants with diaphragm</td>
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<td>3. <strong>Listen for friction rubs (liver/spleen)</strong></td>
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<tr>
<td><strong>PERCUSSION</strong></td>
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<tr>
<td>1. Percuss <em>entire</em> abdomen</td>
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<td>2. **Percuss from below umbilicus to symphysis pubis for bladder distention, pregnant uterus, stool-filled sigmoid</td>
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<td>3. Percuss liver in MCL</td>
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<td>4. Measure liver span in MCL</td>
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<td>5. **Percuss liver in midsternal line</td>
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<td>6. Percuss gastric air bubble - L lower ant. rib cage</td>
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<td>7. Percuss for splenic enlargement - 10th ICS (lowest interspace) in anterior axillary line</td>
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<td>8. <strong>Outline entire area of splenic dullness</strong></td>
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<tr>
<td><strong>PALPATION</strong></td>
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<tr>
<td>1. Perform light palpation in all 4 quadrants</td>
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<td>2. Palpate deeply all 4 quadrants</td>
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<td>3. **Check for rebound tenderness</td>
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<td>4. Palpate liver (bimanual technique and hooking technique)</td>
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<td>5. **Perform fist percussion on liver</td>
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<td>6. Palpate spleen</td>
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<td>7. Palpate right kidney</td>
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<td>8. Palpate left kidney</td>
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<td>9. Palpate aorta and assess width</td>
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<tr>
<td><strong>ADDITIONAL BRANCHING EXAMS</strong></td>
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<tr>
<td>1. <strong>Assess shifting dullness</strong></td>
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<td>2. **Check for fluid wave</td>
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<td>3. **Iliopsoas sign</td>
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<td>4. **Obturator sign</td>
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<td>5. **Murphy’s sign</td>
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<td>6. **Rowsing’s sign</td>
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<td>7. ** CVA tenderness</td>
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<td>8. ** Rectal exam (talk through)</td>
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