الجامعة السورية الخاصة
كلية الطب البشري

Physical examination

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Physical examination

- It is the process of examining the patient's body to determine the presence or absence of physical problems
- The goal of the physical examination is to obtain valid information concerning the health of the patient
- The examiner must be able to identify, analyze, and synthesize the accumulated information into a comprehensive assessment

The four cardinal principles of physical examination

- Inspection التأمل
- Auscultation الإصغاء

  "teach the eye to see, the finger to feel, and the ear to hear"
- Palpation الجس
- Percussion القرع
- What is the fifth? ما هي الفقرة الخامسة

  Smelling الرائحة

Equipment for physical examination

Required :
Stethoscope
Gloves
Tongue blades
Gauze pads
Penlight
Lubricant gel
Tape measure
Nasal speculum
Sphygmomanometer
Tuning fork: 128 Hz,512Hz
Reflex hammer
Safety pins

Optional :
Pocket visual acuity card
Oto-ophthalmoscope

Important aspects of physical examination----physician

- Elegant appearance
- Decent manner (أسلوب) .
- Kind attitude (موقف) .
- Highly responsibility
- Good medical morals (أخلاق) .

Important aspects of physical examination---physician

- Wash your hands, preferably while the patient is watching
- Washing with soap and water is an effective way to reduce the transmission of disease

Sequential

- Conducted in head to toe order: head ---neck---chest---abdomen---spine---extremities---anal---genital---nerve system

- Patients tire quickly when asked to “sit up”, “lie down”, “turn on your left side”, “sit up”, “lie down” and so on

Important aspects of physical examination---patient

The patient should be made as comfortable as possible during the examination

The patient should be properly draped

Important aspects of physical examination

Where is the bed placed?

- When possible, the examining table/bed be situated so that the examiner has access to both sides of the patient

- An ideal arrangement is to have the table located in the center of the examining room

Important aspects of physical examination

Where does the examiner stand?

- Stand right side of the bed
- Exam with one' right hand

Important aspects of physical examination

How to perform the physical examination?

- Sequential
- Proper expose

Proper expose

- Exposing only the area that are being examined at that time without undue exposure of the other areas
- When examining a women's breasts, it is necessary to check for any asymmetry by inspecting both breasts at the same time
- After inspection has been completed, the physician may use the patients gown to cover the breasts not being examined

This caring for the patient's privacy goes a long way in establishing a good doctor-patient relationship

Important aspects of physical examination

- The examiner should continue speaking to the patient
- Showing care to his disease and answer to patient's questions
- It can not only release patient's nervousness, but also help to establish the good physician-patient relationship

Precaution to take

- The use of gloves should provide adequate protection when performing the physical examination or when handling blood-soiled or body fluid-soiled sheets or clothing

- Gloves should be worn when examining any individual with exudative lesions or weeping dermatitis

Precaution to take

- Hands or other contaminated skin surfaces should be washed thoroughly and immediately if accidentally soiled with blood or other body fluids
- All sharp items, such as needle, must be handled with extraordinary care to prevent injuries
- A patient may be in isolation or on special precautions if he/she is suffering from a contagious disease (أمراض معدية) .

Inspection

- Method of observation used during physical examination
- First step in examining a patient or body part
- It includes a general survey of the patient's

mental status
body movement
breath odor
speech
state of nutrition
posture
gait
skin
stature

How to inspect

- Make sure the room is in a comfortable temperature
- Use good lighting, preferably sunlight
- Look and observe before touching
- Completely expose the body part you are inspecting while draping the rest
- Compare symmetrical body parts

Mental status and personal grooming

- Does the patient look well or sick?
- Is he comfortable in bed?
- Does he appear in distress?
- Is he alert or is he groggy(مترنح) .
- Does he look acutely or chronically ill?

poor nutrition sunken eyes temporal wasting loose skin

- Does the patient appear clean?
- Is the hair combed?
- Does he or she bite their nails?

Mental status and personal grooming

The answer to these questions may provide useful information about the patient's self-esteem (احترام) and mental status

Posture

- It may reveal significant information
- Congestive heart failure: sit in a chair the entire night
- Patients with body/tail of the pancreatic cancer: assuming an upright or sitting posture
- Thus the positions of the patient at the time of the examination may suggest certain disease possibilities
- A history of assuming certain positions to obtain relief from pain also may be of diagnostic importance

Auscultation

- A method used to “listen” to the sounds of the body during a physical examination
- Performed by listening through a stethoscope, and to evaluate the frequency, intensity, during, number and quality of sounds

Auscultation

- Direct auscultation
- Indirect auscultation

How to use the stethoscope

- Do's

  warm the diaphragm or bell

  explain what you're listening for and answer patient's question promptly

- Don'ts

  do not apply too much pressure when using the bell

  do not try to listen through clothing

How to auscultate

- Eliminate distracting noises
- Expose the body part you are going to auscultate
- Use the diaphragmto listen for normal heart sounds, and bowel sounds
- Press the diaphragm firmly
- Use the bell to listen for abnormal heart sounds or bruits
- Hold the bell lightly

Palpation

- Methods of “feeling the hands used during physical examinations
- The examiner touches and feels the patient’s body part with his hands to examine
  size consistency
  texture location
  tenderness of an organ or body part
- The palpation of abdomen is particularly important

How to perform palpation

- As with inspection, the initial step in palpation may be facilitated by distracting conversation or questions regarding the history

- It should be emphasized that during the preliminary stages, muscle relaxation is the goal

  ask the patient to flex the thighs and knees

How to perform palpation

- The degree of muscle rigidity or resistance may be made by light palpation
- One should determine whether the abdominal wall exhibits voluntary muscle tightening or actual rigidity
- Muscle spasm cannot be relaxed by voluntary effort
- Voluntary tensing of the muscle is brought about through fear or nervousness, it can be overcome by proper technique
- Always begin palpation in an area of the abdomen that is farthest from the location of pain

Types of palpation

- Light palpation
- Deep palpation

  deep slipping palpation

  bimanual palpation

  deep press palpation

  ballottement

Light palpation

- Using the flat part of the right hand or the pads of the fingers, not the fingertips
- The fingers should be together
- Sudden jabs are to be avoided
- The hand should be lifted from one area to area instead of sliding over the abdominal wall

Light palpation

- The palpating hand should be warm, because cold hands may produce voluntary muscular spasm called "guarding"
- Engaging the patient in conversation often aids in relaxing the patient's abdominal musculature
- Ask patient to be in a supine position and to flex the thighs and knees

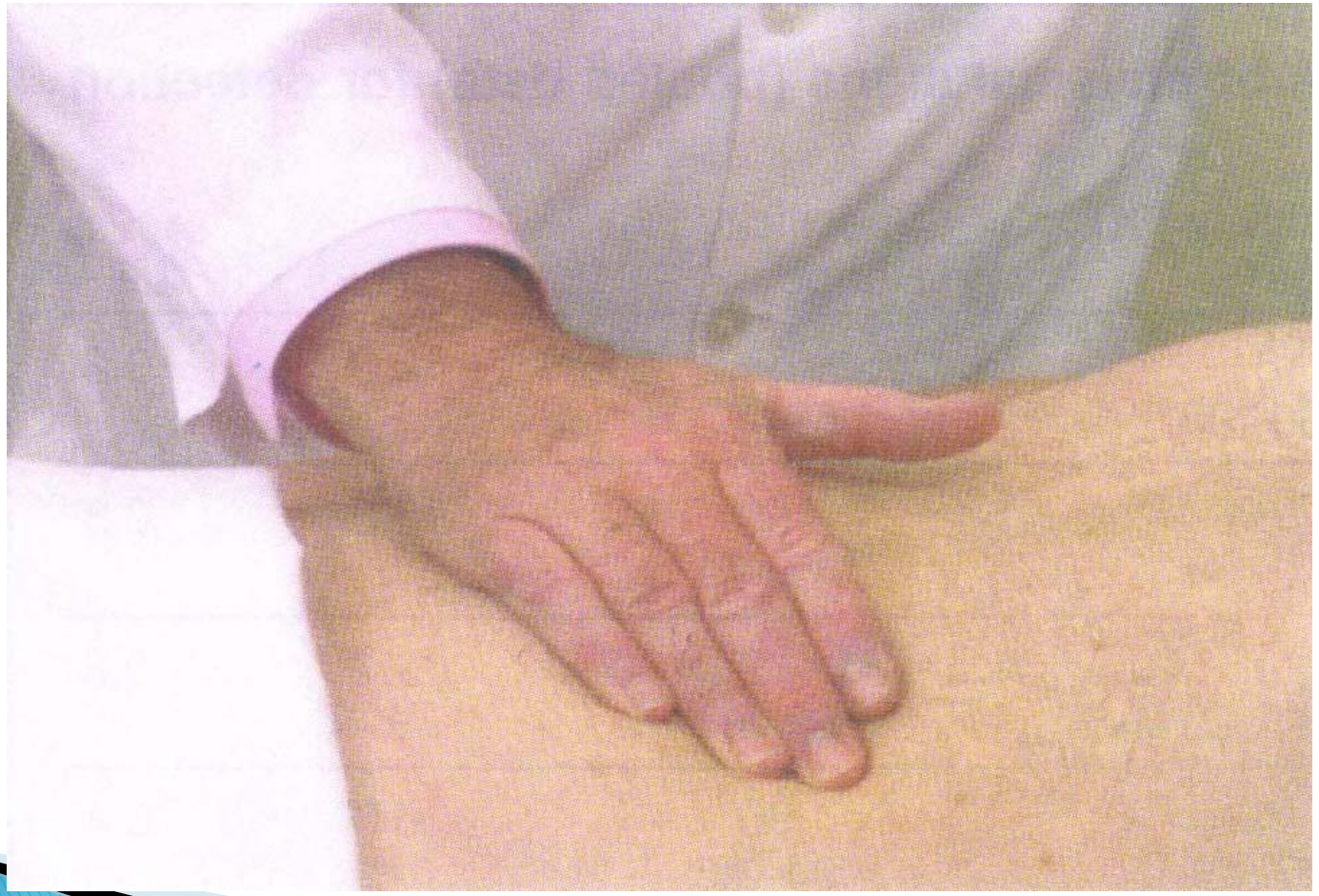
Light palpation

- During expiration , the rectus muscles usually relax and soften
- Used to feel for pulses, tenderness, muscle spasm, rigidity , surface skin texture , temperature, moisture or mass, its size, location, hardness and outline

Light palpation

- Rigidity is involuntary spasm of the abdominal muscles and is indicative of peritoneal irritation
- Rigidity may be:
  diffuse (diffuse peritonitis)
  localized (over an inflamed appendix or gallbladder)
- In patients with generalized peritonitis, the abdomen is described as "board-like"

Light palpation



Deep palpation

- Used to determine organ size as well as the presence of abdominal masses
- The flat portion of the right hand is placed on the abdomen
- Pressure should be applied to the abdomen gently but steadily
- The patient should be instructed to breathe quietly through the mouth and to keep arms at the sides

Deep palpation

Deep slipping palpation

- The examiner uses his forefinger, middle finger and ring finger that are tightly together, slowly and gradually palpate the abdominal organs or masses, slipping up-, down, right side and left side

- It is frequently used for examining the deep mass of abdomen or GI lesions

Bimanual palpation

Bimanual palpation

- Uses two hands, one on each side of the body part being palpated
- Placing the left hand over the pack of organs to be examined, in order to fix or elevate the organs. It may be helpful for the right hand palpation
- It is employed during the processes of liver, spleen, kidney or abdominal masses examination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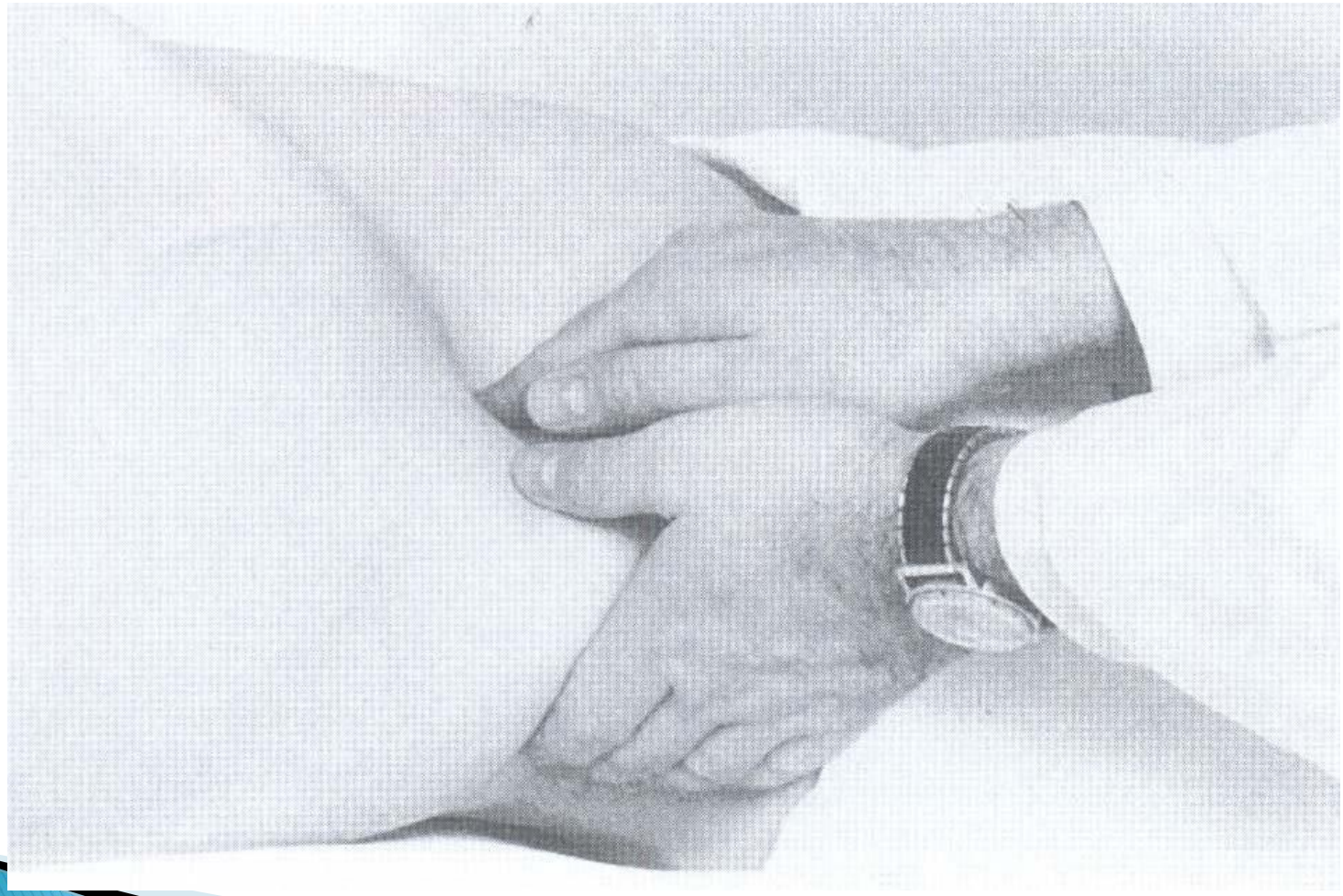
Bimanual palpation



Deep press palpation

- The examiner uses his thumb or 2~3 fingers together to palpate with gradually increasing pressure, in order to identify deep organ lesions or localize the area of abdominal pain
- Such as the pain produced by inflamed gallbladder or appendicitis
- In a patient with abdominal pain, the rebound tenderness should be determined

Rebound tenderness

- It is a sign of peritoneal irritation and can be elicited by palpating deeply and slowly in an area from the suspected area of local inflammation
- The palpating hand is then quickly removed
- The sensation of pain on the side of inflammation that occurs on release of pressure is rebound tenderness

Ballottement

- The examiner places 3~4 fingers together on the surface of suspected abdominal area and push quickly and shortly for several times with the motion from the wrist
- The fingertips might feel the abdominal organs are floating, because it produce ascitic waves
- Employed in palpating the enlarged liver, spleen or masses
- It may also elicit uncomfortable of the patient
- It is suggested do not push too hard

Percussion

- A methods of “tapping” of body parts during physical examination with fingers, hands, or small instruments to evaluate the size, consistency, borders and presence of fluid in body organs
- Percussion of a body part produces a sound that indicates the type of tissue within the organ
- It is particularly important in examining the chest and abdomen

Percussion

- Tapping on the chest/abdominal wall is transmitted to the underlying tissue, reflected back, and picked up by the examiner's tactile and auditory sense
- The sound heard and tactile sensation felt are dependent on the air-tissue ratio

- The vibrations initiated by percussion of the chest enable the examiner to evaluate the lung tissue to a depth of only 5~6 cm, but percussion is valuable because many changes in the air-tissue ratio are readily apparent

Percussion

It is used to detect diaphragmatic movement , the size of heart, edge of liver and spleen and ascitis et al.

Methods of Percussion

- Indirect percussion
- Direct percussion

Indirect Percussion

- The examiner places the middle finger of one hand (left hand) firmly against the patient's surface wall (chest or abdomen), with palm and other fingers held off the skin surface
- The tip of the right middle finger of the hand strikes a quick, sharp blow to the terminal phalanx of the left finger on the skin surface
- The motion of the striking finger should come from the wrist and not from the elbow
- Deliver 2~3 quick taps and listen carefully

Indirect Percussion

- Light percussion
- Moderate percussion
- Heavy percussion

Light Percussion

- Localized and superficial lesions or normal organs
- Heart /liver relative dullness borderline

Moderate Percussion

- Deep and generalized lesions or organs
- Heart/liver absolute dullness borderline

Heavy Percussion

- Deep lesions (7 cm inside of the surface)

Percussion

- It should be performed from upside to downside sequential
- From one side to the other side
- Comparison

Quality of Percussion

According to the identity of the tissue, amount of air gas containing and distance of the organ from the skin surface, the percussion sound include:

Resonance
Tympany
Hyperresonance
Dullness
Flatness

Quality of Percussion

- Resonance: percussion over a structure containing air within a tissue, such as the lung, produces a resonant, higher-amplitude , lower-pitched note

- Tympany: percussion over a hollow air-containing structure, such as the stomach, produces a tympanic, higher-pitched, hollow quality note

Quality of Percussion

- Hyperresonance: the quality of percussion sound is between the resonance and tympany. Such as in children, pulmonary emphysema
- Dullness: percussion over a solid organ, such as the liver, produces a dull, low-amplitude, short-duration note without resonance.

It occurs when the air content of the underlying tissue is decreased and its solidity is increased.

Quality of Percussion

- Flatness: very short, and high pitched (absolute dullness).

  Flatness occurs when there is no air present in the underlying tissue. For example, flatness is found over the muscle of the arm or thigh.

Sounds produced by Percussion

Record of finding	Quality	Where heard
Resonance	Hollow	Normal lung
Hyperresonance	Booming	Air-filled lungs
Tympany	Drumlike	Abdomen
Dullness	Thudlike	Liver
Flatness	Flat	Muscle, bone

Smelling

- A method used to evaluate the relationship between abnormal odor from the patient and disease
- The odor is elicited from the exudates of skin, mucosa, respiratory tract, GI, blood etc
- Abnormal odor may also provide important clues for the diagnosis of the disease