PERIPHERAL VASCULAR SYSTEM
AND LYMPHATIC SYSTEM

Arteries in the Arm

Vessels in the Leg

Venous Flow

Lymphatic Ducts and Drainage Patterns

Structure and Function (cont.)
  • Lymphatics (cont.)
    • Related organs
      • Spleen, tonsils, and thymus aid lymphatic system
      • Located in left upper quadrant of abdomen, it has four functions:
        • Destroy old red blood cells
        • Produce antibodies
        • Store red blood cells
        • Filter microorganisms from blood

Structure and Function (cont.)
  • Lymphatics (cont.)
    • Related organs (cont.)
      • Tonsils (palatine, adenoid, and lingual) are located at entrance to respiratory and gastrointestinal tracts and respond to local inflammation
      • Thymus is flat, pink-gray gland located in superior mediastinum behind sternum and in front of aorta
        • Relatively large in fetus and young child and atrophies after puberty
        • Important in developing T lymphocytes of immune system in children, but it serves no function in adults
        • T and B lymphocytes originate in bone marrow and mature in lymphoid tissue

Immune-Related Organs

Radial Pulse

Ulnar Pulse

Brachial Pulse

Objective Data (cont.)
  • Inspect and palpate the arms (cont.)
  • Modified Allen test used to evaluate collateral circulation prior to cannulating radial artery
    • Firmly occlude both ulnar and radial arteries of one hand while person makes a fist several times; this causes hand to blanch
    • Ask person to open hand without hyperextending it; then release pressure on ulnar
artery while maintaining pressure on radial artery
• Adequate circulation is suggested by a return to hand’s normal color in approximately 2
to 5 seconds
• Although test is simple and useful, it is relatively crude and subject to error
  •

13  □ Femoral Pulse
14  □ Popliteal Pulse
15  □ Posterior Tibial Pulse
16  □ Dorsalis Pedis Pulse
17  □ Pitting Edema
18  □ Manual Compression Test
19  □ Abnormal Findings:
  Variations in Arterial Pulse
  • Weak, “thready” pulse, 1+
  • Full, bounding pulse, 3+
  • Water-Hammer (Corrigan’s) pulse, 3+ (collapses suddenly)
  • Pulsus bigeminus:
  • Pulsus alternans: alternating amplitude
  • Pulsus paradoxus: weaker with inspiration, stronger with expiration/BP decreases with
    inspiration
  • Pulsus bisferiens

20  □ Abnormal Findings:
  Peripheral Vascular Disease
  • Arms
    • Raynaud phenomenon
    • Lymphedema
  • Legs
    • Arterial-ischemic ulcer
    • Venous (stasis) ulcer
    • Superficial varicose veins
    • Deep vein thrombophlebitis

21  □ Abnormal Findings:
  Peripheral Vascular Disease (cont.)
  • Aneurysms
  • Occlusions