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Case 101: Normal distribution of FDG

Intense activity is seen in cortex, basal ganglia and cerebellum. White matter and ventricles are usually seen as photopenic defects. Extra ocular muscle activity is generally seen as small foci of moderate to intense activity in orbital region. Mild to moderate activity can be seen in spinal cord, especially proximally. Mild to moderate, variable and symmetric activity is seen in oropharynx, tonsils and salivary glands. Moderate to intense activity is seen in vocal cords (usually as an inverted U shaped structure) especially if patient is talking during the uptake period. Variable uptake can be seen in skeletal muscles depending on physical activity. Muscular uptake is usually mild to moderate in intensity, linear and symmetric. Thyroid, airways and esophagus are normally not seen on PET images. Physiologic uptake in brown fat can be seen in neck, supraclavicular regions, axilla, mediastinum and posterior intercostal regions as foci of moderate to intense uptake which are symmetric. Lungs, cortices of long bones and usually muscles also are seen as photopenic areas. Mild mediastinal blood pool activity is usually seen. Walls of large vessels may be seen from inflammation in the atherosclerotic plaques. Diaphragm, intercostal and accessory muscles may be visualized in patients with respiratory distress. Variable degree of uptake can be seen in myocardium depending on patient preparation, insulin and blood glucose levels. Moderate and sometimes heterogenous activity is seen in the liver. Normally, spleen is smaller in size than liver and less intense in uptake. Variable degree of uptake is seen in bowel. Usually stomach wall and colonic activity is prominent. This physiologic uptake could be intense but is generally linear and diffuse. Mild physiologic uptake in bone marrow leads to faint visualization of vertebral bodies, pelvis and proximal ends of humerus and femur. Since FDG is excreted by kidneys, mild to moderate activity is seen in cortex and intense activity can be seen in pelvis, ureters and urinary bladder. Focal stasis in ureter and activity in bladder diverticulum can be confused with hypermetabolic adenopathy. Reproductive structures in the pelvis are usually not visualized but physiologic activity is frequently seen in uterus as a focus superior to bladder. Mild to moderate and usually symmetric activity is seen in testes. Fatty tissue is usually seen as photopenic areas in subcutaneous region and in abdomen.