

Abdomen

Abdominal aorta aneurysm

Infrarenal aorta is normally 2cm in diameter. Aneurysm when diameter exceeds 4cm. The incidence of rupture increases with increasing size. 60-80% of patients with aneurysms > 7cm rupture, 95% > 10cm rupture. The risk of rupture for aneurysms of 5cm or less is considerably lower. Diagnostic ultrasound is useful to confirm the diagnosis.

Iliac, femoral and popliteal aneurysms

Popliteal artery is the most common location for a peripheral aneurysm.

Splenic artery calcification

Left upper quadrant, tortuous.

Splenic artery aneurysm

Circular, peripheral rim of calcification left upper quadrant.

Renal artery aneurysm

Circular, peripheral rim of calcification between kidney and spine.

Appendicolith (coprolith, fecolith, fecolith)

Fecal matter, calcium phosphate-rich mucus, and inorganic salts. Oval calcification overlying the right iliac fossa.

Present in 30% of children with acute appendicitis. When associated with abdominal pain, there is a 90% probability of acute appendicitis. Also 50% higher risk of appendiceal perforation.

Gallstones (cholelithiasis)

15-25% are radiopaque (positive). Between the ages of 55-65, 10% of men and 20% of women have gallstones. Diagnostic ultrasound. Over 50% of patients with gallstones are asymptomatic. X-ray: Round or oval, laminated appearance (lucency with ring of calcification at peripheral margin). Anterior to spine.

The 6 Fs of Gallstones

1. Female 2. Fair 3. Fat 4. Fertile 5. Forty 6. Flatulence

Symptoms of Gallstones

- steady, severe pain in the upper abdomen that quickly gets worse
- pain in the back between the shoulder blades
- pain in the right shoulder
- nausea -vomiting -fever -chills
- yellowing of the skin or eyes (jaundice)

Calcification of gallbladder (porcelain gallbladder)

Chronic cholecystitis and obstruction. Frequently associated with carcinoma of the gallbladder.

Renal Calculi (nephrolithiasis)

90% are radiopaque. 3-4 times more common in males. dense calcification, overlies spine on lateral view. Staghorn calculus.

Kidney Stone Belt

-high prevalence of kidney stone southeastern United States
(southeastern, southern, southwestern)
-warmer weather leads to dehydration

Kidney Stones

About 90% radiopaque

85% calcium: drink more water, lemon juice (citrate interferes with calcium stone crystallization), excessive sodium (limit salt), high-oxalate foods (oxalic acid)- spinach, rhubarb, beets, sweet potatoes, peanuts and almonds

15% uric acid: animal protein-limit meat, eggs and seafood

Bladder Stones

About 50% are radiopaque.
Round or jackstone shape.

Nephrocalcinosis

Calcification of renal parenchyma

Phleboliths

Are venous thrombi that have calcified. Found most commonly about the base of the bladder.

Leiomyoma (uterine fibroid)

Smooth muscle tumor. Most common benign tumor of the uterus. One out of four or five women over 35 years of age have uterine fibroids. Rarely- undergo malignant change.
X-ray: mottled calcification in lower pelvis. Solitary or multiple.

Chest

Pneumothorax

Air within pleural space. Spontaneous (simple, bleb ruptures) or secondary (trauma, pulmonary disease). Tension: "ball-valve" effect, leads to progressive air accumulation in pleural space. X-ray: Air in pleural space is radiolucent (no vascularity), white line of visceral pleura is visible, volume loss of lung. Expiration view increases the size of pneumothorax.

Atelectasis (Collapse)

Endobronchial lesion, extrinsic bronchial compression. X-ray: Displaces fissures, increase in opacity of the involved segment of lobe. Elevation of hemidiaphragm, displaced structures.

Silhouette Sign

Most of right heart border--RML

Upper right heart border and AA--anterior segment RUL

Aortic arch--apical posterior segment LUL

Upper left heart border--anterior segment LUL

Most of left heart border—lingula LUL

Pleural Effusion

Collection of fluid in pleural space. Tumor, inflammation, cardiovascular, metabolic, trauma. X-ray: Lateral decubitus view, subpulmonic effusion, blunting of costophrenic angles, meniscus sign.

Pneumonia

Lobar: Involves alveoli. Homogeneous opacity (consolidation) in one or more segments, or lobe (no volume loss, air bronchograms).

Broncho: Affects bronchi and adjacent alveoli. Patchy opacities.

Viral: Interstitial pattern.

Lung Carcinoma

Mass with spiculated, irregular borders. Unilateral hilar enlargement, mediastinal widening, cavitation, atelectasis (Golden's inverted "S" sign), obstructive pneumonia, pleural effusion.

Apical Ca (superior sulcus tumor): Pancoast's syndrome.

Lung Metastases

Pathways: pulmonary arteries, systemic venous system, lymphatic, direct extension, endobronchial spread. X-ray: Multiple lesions (95%), lung bases > apices, peripheral > central