Adrenal Enlargement

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Adrenal Enlargement

Benign adenomas

- Imaging characteristics consistent with a benign cortical adenoma are:
  Round and homogeneous density; smooth contour and sharp margination
- Diameter less than 4 cm; unilateral location
- Low unenhanced CT attenuation values (<10 HU)
- Rapid contrast medium washout (10 minutes after administration of contrast, an absolute contrast medium washout of more than 50 percent)
- Isointensity with liver on both T-1 and T-2 weighted MRI sequences
- Chemical shift evidence of lipid on MRI
**Adrenal Enlargement**

**Pheochromocytomas**

- The imaging characteristics of a pheochromocytoma include:
  - Increased attenuation on nonenhanced CT (>20 HU)
- Increased mass vascularity
- Delay in contrast medium washout (ten minutes after administration of contrast, an absolute contrast medium washout of less than 50 percent)
- High signal intensity on T-2 weighted MRI
- Cystic and hemorrhagic changes
- Variable size and may be bilateral
Adrenal Enlargement

Adrenocortical carcinoma

• Imaging characteristics of an adrenocortical carcinoma include:
  • Irregular shape and inhomogeneous density because of central areas of low attenuation due to tumor necrosis
  • Tumor calcification with a diameter usually >4 cm
  • Unilateral location
  • High unenhanced CT attenuation values (>20 HU) Inhomogeneous enhancement on CT with intravenous contrast
  • Delay in contrast medium washout (ten minutes after administration of contrast, an absolute contrast medium washout of less than 50 percent)
  • Hypointensity compared with liver on T-1 weighted MRI and high to intermediate signal intensity on T-2 weighted MRI
  • High standardized uptake value (SUV) on FDG-PET-CT study
  • Evidence of local invasion or metastases.
Adrenal Enlargement

Adrenal metastases (lung, breast)

• Characteristics
  Irregular shape and inhomogeneous nature
• Tendency to be bilateral
• High unenhanced CT attenuation values (>20 HU) and enhancement with intravenous contrast on CT
• Delay in contrast medium washout
• Isointensity or slightly less intense than the liver on T-1 weighted MRI and high to intermediate signal intensity on T-2 weighted MRI
Adrenal Enlargement

- Autoimmune Adrenalitis.
- Non Classic Congenital Adrenal hyperplasia.
- Infectious infiltration: TB, histoplasma, paracoccidioidomycosis, cryptococcosis, coccidioidomycosis, HIV (CMV, kaposi’s sarcoma).
- Malignancy: B cell lymphoma (endovascular), T cell lymphoma
- Adrenal hemorrhage (antiphospholipid synd).
- Erdheim-Chester disease