

# Iron Deposition

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02/11/2010

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## History

12 year old female with aplastic anemia.

## Diagnosis

Iron Deposition

## Discussion

Normally only a trace amount of iron is present in the liver, spleen and bone marrow. Aplastic anemia represents a secondary form of hemochromatosis, increased iron results from hemolytic anemia and transfusion therapy. Red blood cells are phagocytosed by the reticuloendothelial system leading to increase iron content within the liver, spleen and bone marrow. Eventually the capacity of the reticuloendothelial system is exceeded and iron is deposited in other tissues including periportal hepatocytes, pancreas, myocardium and pituitary.

Unenhanced CT is ~60% sensitive for iron detection in the liver (normal liver density is between 45 and 65 HU). Dual energy CT can quantify hepatic iron load early in the disease; since quantification requires comparison to spleen, this method is inaccurate once the spleen becomes involved. MRI is becoming the modality of choice for determining tissue iron deposition (liver, spleen and pancreas); ferritin and ferric ions produce paramagnetic susceptibility artifacts leading to loss of signal.

## Findings

CT-Noncontrast images at 120 kVp demonstrate increased density of the liver and spleen, 96 HU and 65 HU respectively. Note the relatively high density of the liver compared to hepatic vasculature.

## Reference

Lowe LH. Diffuse Parenchymal Disease. Caffey's Pediatric Diagnostic Imaging, 11th Ed (2008).

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