Medical Image of the Week: Increased Liver Attenuation

Figure 1. Coronal (A) and axial (B) CT scan without contrast demonstrating diffuse increase in hepatic density.

An 86-year old man had a non-contrast thoracic CT for evaluation of a chest x-ray abnormality. Incidentally, the CT scan showed diffuse increase in liver density with Hounsfield units of 105. The normal unenhanced attenuation value is between 55-65 Hounsfield units in a normal liver on CT scan without contrast (1). Hepatic attenuation is reflected in Hounsfield values and depends on combinations of factors including the presence or absence (as well as phase) of IV contrast administration.

The patient had no known underlying liver disease and liver function studies were within normal limits. Figure 1 shows coronal and axial views of the CT scan of the patient.

There are several intrinsic liver pathologies leading to diffuse changes in liver attenuation including (2):

- Deposits of certain metals seen in hemochromatosis, hemosiderosis, and Wilson's disease.
- Glycogen storage disease(es)
- Medications/drugs including amiodarone and gold therapy (3-7).
- Previous Thorotrast administration – Thorotrast is a contrast agent used between 1930-1950 and was found to be carcinogenic and can cause hepatic angiosarcoma, cholangiocarcinoma, and hepatocellular carcinoma. It is retained in the reticulo-endothelial system for long periods of time (8).

After reviewing the patient's case he had been on chronic amiodarone therapy and had not had exposures or clinical history related to any of the other above causes of increased hepatic density. Based on imaging and history it is suspected that patient's diffuse increase in liver density is secondary to iodine infiltration from chronic amiodarone usage.

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