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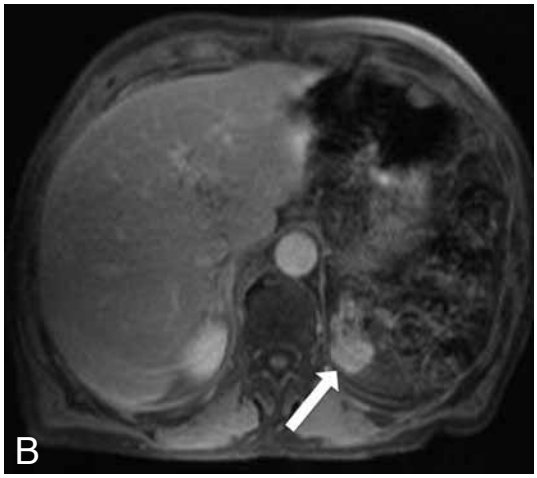
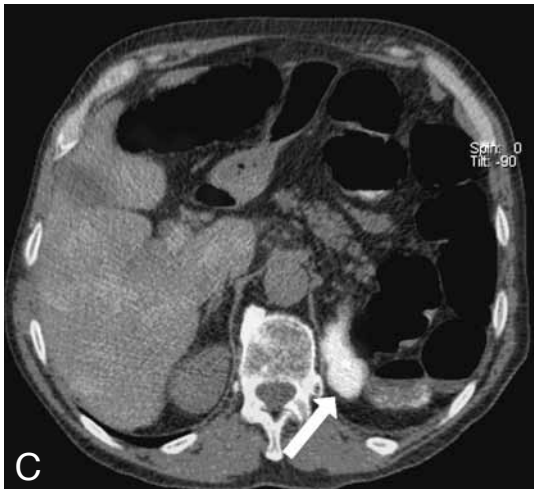
IMAGES IN CLINICAL RADIOLOGY





Selective spleen SPECT/CT

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During virtual colonoscopy, performed for severe constipation in a 77-year-old male, a mass (22 x 51 mm) was detected in the tail of the pancreas. The CT features of the lesion were compatible with a mucous cystadenoma / cystadenocarcinoma: low density (HU: 40), smooth margins and presence of micro-calcifications (Fig. A).

The patient's history included: prostatectomy for prostate cancer, splenectomy following trauma, atrial fibrillation for which he was chronically anticoagulated.

A biopsy was contraindicated because of anticoagulation, so additional MRI images were acquired. The mass showed heterogenous contrast enhancement in the arterial phase, a contrast enhancing pattern which excludes the diagnosis of cystadenoma / cystadenocarcinoma, and suggests that the lesion could consist of ectopic splenic tissue (Fig. B).

A selective spleen SPECT/CT scan showed intense accumulation of heat denaturated 99mTc-labeled red blood cells in the lesion confirming hereby the presence of functioning splenic tissue (Fig. C).

Comment

This technique consists of ex-vivo labelling erythrocytes with 99mTc-pertechnetate, heating the cell to 49.5°C during 15 minutes and washing the cells prior to intraveous administration. Imaging can be started 30 min after injection. Although selective spleen scintigraphy has been around for more than 3 decades and its yield to detect functional splenic tissue is very high, most nuclear medicine specialists and radiologists are reluctant to use it, largely because most of them are unfamiliar with the technique. However, when ectopic splenic tissue is suspected, and other imaging techniques fail to determine the exact nature of the lesion or when biopsy is contra-indicated or risky, hybrid imaging with heat denaturated 99mTc-labeled red blood cells can lead to the diagnosis.

Reference

1. Smith T.D., Richards P.: A simple kit for the preparation of 99MTc-labeled red blood cells. *J Nucl Med*, 1976, 17: 126-132.

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