Review Article

**Current methods of focal liver lesion diagnosis**

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Abstract

Introduction

The widespread availability of non-invasive radiological and diagnostic imaging techniques significantly contributed to the detectability of focal lesions in the liver. Ultrasonography, computed tomography (CT) multidetector CT (MDCT), conventional magnetic resonance imaging (MRI), diffusion-weighted magnetic resonance imaging (DW-MRI) and isotope imaging are used for focal liver diagnosis.

Aim

This article reviews the available methods for diagnosing focal liver lesions on the basis of current literature.

Discussion

The diagnostic precision of a conventional ultrasound test in detecting and differentiating focal hepatic lesions is estimated at 62%. Its sensitivity for the detection of metastases ranges from 40% to 80%. If the majority of metastatic tumors are small, the sensitivity of ultrasound tests decreases dramatically to 20% for foci smaller than 1 cm.

Multi-phase hepatic CT is the current standard that effectively diagnoses 63%–87% of focal changes in the liver. In many cases, standard MRI is sufficient for differentiating between benign and malignant tumors, but the results are often inconclusive. DW-MRI has emerged as a highly promising technique for oncological imaging, and it is used at various stages of oncological treatment.

The discussed method does not require the administration of intravenous contrast, therefore, it is easy to repeat and useful in patients who suffer from severe renal dysfunctions and are at the risk of nephrogenic systemic fibrosis.

In diagnosis of hepatic metastases, the sensitivity of 18F-FDG-PET/CT scans reaches up to 96%, and their specificity is estimated at 75%.

Conclusions

Among various imaging techniques diffusion-weighted imaging has emerged recently as a highly promising one.

**Keywords**

MDCT; MRI; DW-MRI; Liver; Focal; Lesion