

LAVA

Liver Acquisition Volume Acceleration (LAVA) is a 3-dimensional spoiled gradient echo acquisition that automatically uses a partial Kz filling technique and a segmented spectral inversion at lipids technique. This technique applies small number of alpha pulses (labeled views per segment) after the inversion pulse resulting in limitation of fat recovery, and thus better fat suppression. LAVA combines contrast-enhanced, multi-phase imaging of the abdomen with high resolution, larger coverage and uniform fat suppression. In one breath-hold, it acquires a stack of overlapping thin slices with high in-plane resolution. LAVA produces images of the arterial, portal and venous phases that not only depict anatomy and contrast uptake but also contain vascular information. LAVA enables abdominal imaging with the information rich contrast of MR and simplicity of CT.

Utility of LAVA in HCC

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"LAVA is an excellent technique for assessing HCC status post chemoembolization"

Patient history

- A patient presented with HCC and K/c/o liver cirrhosis post chemoembolization
- RF ablation of lesion segment IV performed in October 2011

MRI technique

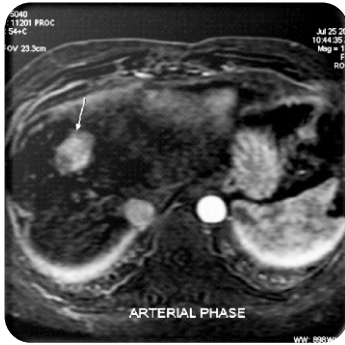
Routine MRI protocol with T1 and T2 sequences in multiple planes was performed along with dynamic intravenous gadolinium injection in multiple phases. A well defined focal lesion with post RF ablation status in the segment IV of left lobe of liver was seen. Its enhancement pattern on dynamic intravenous was suggestive of reactivation of HCC in superior aspect of the lesion.

Findings

Axial T2 W fat sat image showed hypointensity in segment IV lesion due to coagulative necrosis secondary to RF ablation. The small focus in segment VIII with overlying capsular retraction was seen secondary to previous chemoembolization. This is unchanged compared to the previous



Axial T2 W Fat Sat image showed hypointensity in segment IV lesion due to coagulative necrosis secondary to RF ablation. The small focus in segment VIII with overlying capsular retraction is secondary to previous chemo-embolization. This remained unchanged as compared to previous CT study



Subtracted image of Arterial phase of dynamic intravenous gadolinium study reveals intense enhancement in superior aspect, showing signs of reactivation of HCC

Arterial phase of the study reveals another lesion with intense enhancement in segment II of left lobe of liver



Venous phase of the study reveals rapid washout of contrast from the lesions in segment II & IV with capsular enhancement, showing signs of multifocal HCC

Image courtesy to Shree Imaging, Thane, Mumbai

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