

MR ELASTOGRAPHY OF LIVER FOR CLINICAL FOLLOW UP AND ASSESSMENT OF TREATMENT RESPONSE IN CHRONIC LIVER DISEASES

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Purpose:

The purpose of this poster is to illustrate the utility of magnetic resonance elastography (MRE) in the a) evaluation of liver fibrosis b) follow up and b) assessment of response to treatment in patients with chronic liver diseases.

Outline of Content:

- MR Elastography technique in clinical practice- This section will describe the setup and integration of MRE in routine liver MRI study protocol
- Performance of MRE in evaluation of hepatic fibrosis in chronic liver diseases from various etiologies- The accuracy of differentiating normal from fibrotic livers and other stages will be described.
- The role of MRE in follow-up of chronic liver diseases will be illustrated with examples showing progression of disease or improvement or stable disease. The change in stiffness can be present even without any significant morphological changes (fig 1-2)
- Utility of MRE in assessment of response to anti-fibrotic treatment illustrated with examples (fig.3).

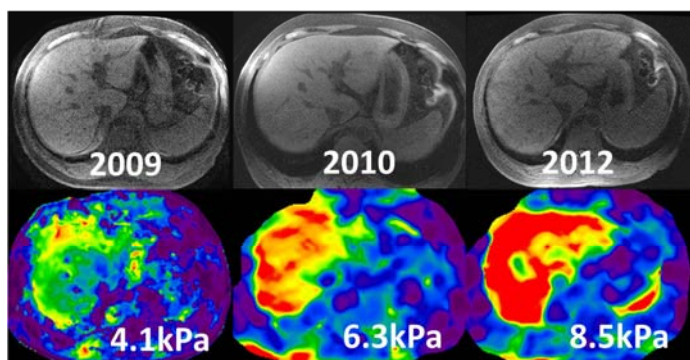


Fig.1. A63-year- old male with chronic hepatitis C. In 2009 the liver stiffness was 4.1kPa and within a year of follow up the liver stiffness increased to 6.3kPa and progressed to 8.5kPa in 2012. Patient was asymptomatic throughout and with normal liver functions. Although there was no significant morphological changes except for mild left lobe enlargement, there was reduction in platelet count to 100,000 and portal gastropathy consistent with progression of liver fibrosis. Note that there is significant left lobe enlargement obvious in 2012 study but only subtle in 2010 study when MRE showed the obvious change suggesting progression of liver fibrosis.

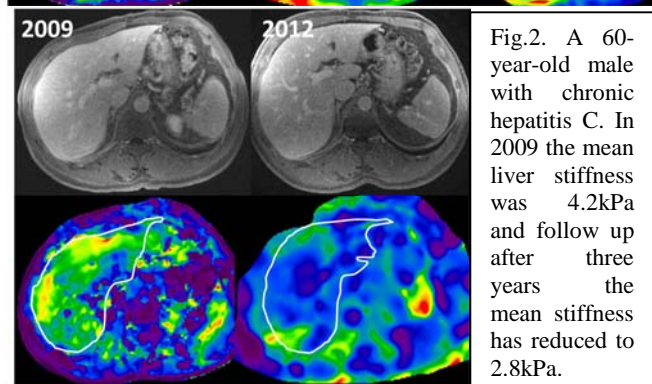


Fig.2. A 60-year-old male with chronic hepatitis C. In 2009 the mean liver stiffness was 4.2kPa and follow up after three years the mean stiffness has reduced to 2.8kPa.

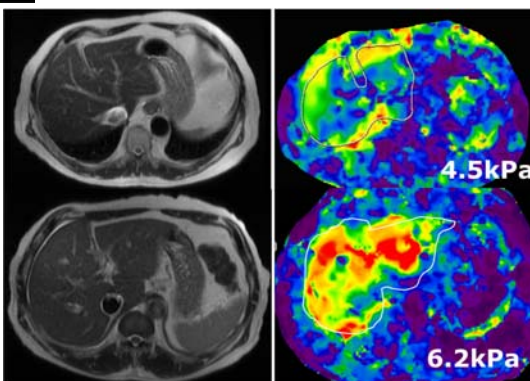


Fig 3. A 58-year-old male with chronic hepatitis B. One year after anti-viral treatment, a repeat MRE shows increased liver stiffness in keeping with progression of liver fibrosis and failure of antiviral treatment

Summary:

Magnetic Resonance Elastography is a versatile non-invasive technique for evaluation of liver fibrosis with a high accuracy for distinguishing normal and fibrotic liver. MRE is an excellent technique for differentiating different stages of liver fibrosis and therefore can replace liver biopsy. MRE is a useful alternative to liver biopsy in the management of chronic liver diseases in their follow up and in assessment of response to antifibrotic treatment.