***MICROVASCULAR FLOW IMAGING IN MUSCULOSKELETAL ULTRASOUND IN HORSES***

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*Introduction*

Microvascular flow Imaging (MVFI) is a recently developed Doppler technology using an advanced clutter filter for assessment of low velocity small vessels.

The objectives of this study were to compare vessels detection’s performance of MVFI and Power Doppler (PD) in a series of clinical cases with tendinous, synovial and/or subcutaneous lesions and to assess ability of MVFI to detect perfusion in normal tendons.

*Material and methods*

Clinical cases were prospectively included if they had B-mode ultrasonographic abnormalities in a tendinous and/or synovial and/or subcutaneous structure with detectable signal in PD and/or MVFI. Four normal horses were used to assess tendons’ perfusion detection with MVFI. Images and/or short movies of each area with a visible Doppler signal in at least one Doppler modality were collected. PD and MVFI images of the same area were compared side-by-side by 3 readers in consensus.

Results

Twenty-three horses were enrolled for a total of 27 lesions. There were 8 and 17 lesions of synovial and tendinous structures respectively and 2 wounds. Six were septic and 21 non-septic. Vessel’s visibility and number were considered superior with MFI in 20/27 lesions. MFI allowed detection of tendinous blood flow in all normal horses in constant anatomical positions.

Conclusion

MVFI was superior to PD for detecting slow blood flow and was able to detect normal perfusion in normal tendons. Because MVFI will become more available, also on portable ultrasound machines, awareness of its higher sensitivity and ability to detect vessels in normal tendons is essential for equine practitioners.

References

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