Bölüm 19

KAS İSKELET SİSTEMİNDE SONOELASTOGRAFİ UYGULAMALARI

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GİRİŞ

Palpasyon, temel fizik muayene yöntemlerinden biridir. Dokuların mekanik özelliklerinin değerlendirilmesinde çok eski zamanlardan beri kullanılmaktadır (1). Ancak palpasyon ile erişilebilir organların sınırlı olması, az sayıda hastalık tespiti ve uygulayana bağımlı olması tanıda zorluklara yol açabilmektedir (1,2). Sonoelastografi, palpasyon yöntemindeki limitasyonları aşmayı hedefleyen, dokuların mekanik yapıları hakkında kalitatif ve kantitatif bilgiler sağlayan, noninvaziv bir görüntüleme tekniğidir (3). Ses dalgaları ile oluşturulan basınca karşı dokuda oluşan direncin değerlendirilmesi ve dokuda meydana gelen değişikliklerin görüntüye dönüştürülmesi temeline dayanır (1,3).

Kas iskelet sisteminde sonoelastografi kullanımı, düşük maliyet, kolay ulaşılabilirlik, karşı taraf ile dinamik gerçek zamanlı karşılaştırma olanağı gibi kendine özgü avantajları ve teknolojik gelişmelerle birlikte zamanla giderek artmıştır (4). Dinamik bir gelişim gösteren sonoelastografi yönteminin, tanısal doğruluğu, güvenilirliği ve tekrar edilebilirliği üzerine çalışmalar literatürde yerini almıştır. Bu yazıda sonoelastografi teknikleri kısaca bahsedilecek ve bu tekniklerin kas iskelet sistemindeki uygulamaları ayrıntılı olarak ele alınacaktır.

SONOELASTOGRAFİ TEKNİKLERİ

European Society of Ultrasound in Medicine and Biology, 2018 yılında yayınladığı kılavuzda, sonoelastografinin kas ve iskelet sistemi değerlendirilmesinde, strain elastografi (SE), akustik radyasyon force impuls (ARFI) görüntüleme ve shear wave elastografi (SWE) tekniklerinin kullanılabileceği belirtilmiştir (5).

STRAIN ELASTOGRAFİ

SE, klinik pratikte ilk kullanılan sonoelastografi tekniğidir (6). Dokularda eksternal veya internal yöntemlerle elde edilen basınç değişikliklerine bağlı değişiklikler gerçek zamanlı ölçülerek görüntüleme sağlanır. Kompresyon ortadan kalktığında dokudan alınan yer değiştirme bilgisi, konvansiyonel B-mod görüntüler ile birleştirilerek elastogram görüntüleri elde edilir (7). Verilerin görüntülenmesinde sıklıkla renk haritaları kullanılmaktadır. Renk haritalarında genellikle en sert doku mavi, en yumuşak doku kırmızı ve ara sertlikteki dokular sarı-yeşil olacak şekilde kod-

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