3. BÖLÜM

KALP YETERSİZLİĞİNDE EKOKARDİYOGRAFİK GÖRÜNTÜLEME

Serkan ÜNLÜ[1]

GİRİŞ

Kalp yetersizliği (KY), kardiyovasküler morbidite ve ölümlerin başlıca sebeplerindendir. KY tanısı her ne kadar fizik muayene ile konulabilse de kalbin herhangi bir yapısal veya fonksiyonel anormalliğinin görüntüleme yöntemleri ile gösterilmesi önem taşır. KY vakalarının büyük çoğunluğunda, hastalığın değerlendirilmesi için kullanılan ilk kardiyak görüntüleme testi transtorasik ekokardiyografidir (TTE) ve kullanımı kalp yetmezliği kılavuzlarında sınıf I öneridir [1–3]. TTE, uygulaması kolay, girişimsel olmayan, miyokardın, kapakların yapısı ve işlev ile, hemodinamiği hakkında çok miktarda bilgi verebilen düşük maliyetli, güvenli bir tetkiktir. KY hastalarında tanı yanı sıra, tedavi seçenekleri arasında seçimin yapılmasında ve tedavi yanıtının değerlendirilmesi konusunda önemli role sahiptir.

KY hastalarında TTE görüntülemenin temel amaçları, miyokardiyal yapı ve fonksiyon, perikard hastalıkları, kapak hastalıkları ve kalbin hemodinamik durumunun değerlendirmesi olaraksayılabilir [3]. Deformasyon görüntüleme miyokard hakkında daha detaylı bilgi sağlamasına rağmen ancak TTE'nin doku karakterizasyon yeteneği kardiyak manyetik rezonans incelemeden çok düşüktür. KY ile takipli ve KY açısından araştırılan hastalarda öncelikle değerlendirilmesi gereken sol ve sağ ventriküllerin boyutları ve sistolik fonksiyonlarıdır. TTE ile kardiyak yapıların boyutları, morfolojisi, sol ve sağ ventrikül fonksiyonunun değerlendirmesi kolayca yapılabilir. Sınıflandırma ve tedavi seçeneklerinin belirlenmesi açısından KY baskın klinik özelliklere göre sınıflandırılmaya çalışılmıştır [3]. KY hastalarında, düşük veya yüksek debili, düşük veya korunmuş ejeksiyon fraksiyonlu, sistolik veya diyastolik olmak üzere tanımlamalar yapılmıştır. KY'nin sol ventrikül ejeksiyon fraksiyonuna dayanan göreceli yeni sınıflandırması, klinik literatürde daha geniş bir kabul görmüş ve günümüzde evrensel olarak kabul edilmiştir. Bu sınıflandırma içerisinde yer alan ve neredeyse tüm KY vakalarının yarısını oluşturan korunmuş ejeksiyon fraksiyonlu KY, KY klinik özellikleri olması ve sol ventrikül ejeksiyon fraksiyonu normal iken sol ventrikül diyastolik fonksiyonunda bozulma izlendiğinde teşhis edilir. Son KY kılavuzları sol ventrikül ejeksiyon fraksiyonunun ≥% 50 olmasını korunmuş, % 41-49 olmasını sınır, ≤% 40 olmasını ise düşük ejeksiyon fraksiyonu olarak tanımlamaktadır. Korunmuş ejeksiyon fraksiyonlu

[1] Öğr. Gör. Dr., Gazi Üniversitesi Tıp Fakültesi, Kardiyoloji AD, unlu.serkan@gmail.com

KALP YETMEZLİĞİNDE CİHAZ TEDAVİLERİ İÇİN EKOKARDİYOGRAFİK DEĞERLENDİRME

KY ile takipli hastalarda cihaz tedavilerinin seçimi de ekokardiyografik değerlendirmeye bağlıdır. KY bulunan hastalara uygulanabilecek implante edilebilir kardiyoverter defibrilatörler, kardiyak resenkronizasyon tedavisi ve ileri KY bulunan hastalara yardımcı olabilecek ventrikül destek cihazlarının yerleştirilmesi kararlarında ekokardiyografik incelemenin yeri oldukça önemlidir.

İmplante edilebilir kardiyoverter defibrilatör tedavisi için hasta seçimi ejeksiyon fraksiyonunun ölçümüne bağlıdır. İmplante edilebilir kardiyoverter defibrilatör yerleştirilmesinde limit değer olarak belirlenen ejeksiyon fraksiyonu değerleri düşük ejeksiyon fraksiyonlu KY hastaları için uygun gözükmektedir. Ancak korunmuş ejeksiyon fraksiyonuna sahip KY hastalarında da aritmi azımsanmayacak kadar sıklıkla ölümlere neden olabilmektedir. Bu konuda heterojen miyokardiyal fibrozis değerlendirmesi faydalı olabilir. Miyokardiyal fibrozis dolaylı olarak benek takibi yöntemi ile ölçülebilen mekanik dispersiyonla ilişkili bulunmuştur [69–71].

Kardiyak resenkronizasyon tedavisi KY olan hastalarda onaylanmış bir tedavidir. Ejeksiyon fraksiyonu ölçümü karar aşamasında oldukça önemli yer tutmaktadır Bununla birlikte, önemli sayıda hasta bu pahalı ve girişimsel işleme beklenen yanıtı vermemektedir. Bu, en güncel klinik kılavuzları uygularken bile bugün hala kullanılmakta olan özgül olmayan uygunluk kriterlerinin sonucudur. Hasta seçimini iyileştirme amacı ile ekokardiyografi tabanlı parametreler önerilmiştir. Bunlar mekanik dissenkroni göstergesi olan "septal flash" ve "apical rocking" parametreleridir. Kardiyak resenkronizasyon tedavisine verilecek yanıtı öngörmede oldukça başarılı oldukları gösterilmiştir. Kardiyak resenkronizasyon tedavisi konusunda ekokardiyografik değerlendirme, ventriküler genişlemenin ciddiyeti, sağ ventrikül tutulumu ve mekanik senkronizasyonu göstererek tedavi cevabını öngörebilir [72–75].

Ventriküler destek cihazları için hasta seçimi ve bu hastaların izlenmesi oldukça özel bir konudur. İmplantasyon öncesi değerlendirmenin en önemli yönlerinden biri sağ ventrikül işlevinin değerlendirilmesi ile ilgilidir ve ciddi sağ ventrikül fonksiyon bozukluğu olan kişiler için biventriküler destek cihazları düşünülebilir [76,77].

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