BÖLÜM 26

MİDE NÖROMUSKULER FONKSİYONLARI VE MOTİLİTE HASTALIKLARI

Burçin ÖZKART [1] - Alper UYSAL [2]

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GİRİŞ

Sindirim kanalı vücuda su, eletrolitler, vitaminler ve besinleri sağlar. Bunu gerçekleştirmek için gıdaların sindirim kanalında hareketi, sindirim enzimlerinin salgılanması, suyun ve sindirilmiş ürünlerin emilimi gerekmektedir. Bu fonksiyonlar sırasında özellikle besinlerin mekanik olarak daha küçük parçalara ayrışması ve kimusun ince bağırsaklara iletilmesinde mide rol oynamaktadır.

Gıdaların mekanik sindiriminde ve gastrointestinal kanal içinde ilerletilmesinde mide nöromuskuler sistemi tarafından oluşturulan üç aşama mevcuttur. Bunlar; fundusun reseptif relaksasyonu, tekrarlayıcı korpus ve antrum peristaltik hareketleri ve antropiloroduedonal koordinasyon ile antrum hareketleridir. Bu aşamalar alınan besinlerin kimüs haline getirilmesinde ve kimusun ince bağırsaklara ilerletilmesinde önemli rol oynamaktadır. Midenin bu fonksiyonlarının bozulması bulantı, postprandiyal dolgunluk gibi semptomlara yol açmaktadır.

Midenin nöromuskuler aktiviteleri-relaksasyonu ve peristaltik hareketleri-mide duvarında longutidinal, sirküler ve oblik olarak üç katman halinde bulanan düz kas lifleri ile sağlanmaktadır. Bu düz kas tabakalarının kontrolü merkezi sinir sistemi, parasempatik sinir sistemi ve sempatik sinir sistemi tarafından kontrol edilmektedir. Merkezi sinir sistemi ve otonom sinir sisteminin yanında, tüm gastrointestinal sistemde bulunan myenterik sinir sistemi ve interstisyel Cajal hücreleri de düz kas tabakalarının koordineli olarak kasılmasında ve gevşemesinde rol oynamaktadır.

Midenin mekanik sindiriminde en önemli rolü oynayan düz kasların elektriksel aktivitesinde yavaş ve dikensi şekilde iki temel dalga tipi bulunmaktadır (1). Dikensi dalgalar mide kas liflerinin kasılmasına yol açan aksiyon potansiyelleridir. Yavaş dalgalar ise peristaltik hareketin frekansını belirlemektedir. Bu dalgalar normal hücrelerde görülen aksiyon potansiyelleri değil, dinlenme zar potansiyelindeki yavaş ve dalgalanma gösteren değişikliklerdir. Yavaş dalgaların ana kaynağı submuskuler, intramuskuler, myenterik ve subserosal tabakalarda bulunan interstisyel Cajal hücreleridir (2). Bu hücreler intrasellüler ve ekstrasellüler kalsiyum iyonlarının değişimi sayesinde spontan olarak yavaş dalgaları oluşturur ve bağlantıda olduğu komşu düz kas hücrelerinde voltaj bağımlı, L tipi kalsiyum kanal aktivasyonuna neden olur (3). Depolarizasyonda ve repolarizasyonda en önem-

[1] *Uzm. Dr., Ege Üniversitesi Tıp Fakültesi, İç Hastalıkları AD., Gastroenteroloji BD., Gastroentroloji Yandal Asistanı, drburcinozkart@gmail.com, ORCID iD: 0009-0009-4605-856X*

[2] *Uzm. Dr., İstanbul Kanuni Sultan Süleyman Egitim ve Araştırma Hastanesi, Gastroenteroloji Klinigi, alper_uysal@live.com, ORCID iD: 0000-0002-5473-9383*

vuk ve hindi göğüs eti kullanılır. Bu katı gıdaların taze sebzeler veya kırmızı etlere kıyasla sindirim ve boşaltımı daha kolaydır. Kızarmış ve yağlı yiyeceklerden kaçınılır çünkü yağlar mide boşalmasını geciktirir. Her 3 adımda da günlük olarak çiğnenebilir multivitamin alınır (53).

Kronik bulantı ve kusması olan hastalarda, sık kusma ataklarını önlemek ve yaşam kalitesini artırmak amacıyla mide içeriğini periyodik olarak boşaltmak için perkütan endoskopik gastrostomi (PEG) tüpleri yerleştirilebilir (128). PEG altta yatan gastrik nöromüsküler bozukluğu tedavi etmez, ancak tekrarlayan kusma atakları olan hastalarda midenin boşalmasına olanak tanır, hastaneye yatışlar azalır (89). İlaçlar ve nütrisyon sıvıları gastrostomi tüpünden verildiğinde tolere edilebilir. Gastrik nöromüsküler bozukluklardan kaynaklanan şiddetli bulantı ve kusması olan hastalara temel kalori desteği sağlamak amacıyla enteral beslenme için jejunal beslenme tüplerine (nazoenterik tüp beslemesi denendikten sonra) ihtiyaç duyulabilir. (128). Enteral beslenme endikasyonları arasında 3-6 aylık bir süre boyunca normal vücut ağırlığının %10'u veya daha fazlasının istemsiz kaybı ve/veya dirençli semptomlar nedeniyle tekrarlayan hastane yatışları yer almaktadır. Beslenmeye seyreltilmiş infüzyonlarla düşük infüzyon hızlarında (örn. 20 ml/saat) başlanır ve izo-ozmolar preparatlara kademeli olarak ilerletilir. Beslenme ve hidrasyonu desteklemek için 12-15 saat/gün boyunca en az 60 ml/saat olacak şekilde hedef infüzyon hızına yükseltilir. Sıklıkla sepsis ve nadiren venöz tromboz gelişmesi nedeniyle mümkünse santral IV kateterler yoluyla TPN'den kaçınılmalıdır.

SONUÇ

Gastrik nöromüsküler bozuklukların görülme sıklığı giderek artmakta ve önemli bir sağlık yükü oluşturmaktadır. Hastalarda bulantı, kusma, erken doyma/postprandial dolgunluk, şişkinlik ve/veya karın ağrısı gibi semptomlar görülebilir. Gastrik nöromüsküler bozukluklar en sık kadınlarda görülmektedir. Çoklu mekanizmalar farklı semptomlara neden olabilir ve bu da bu hasta popülasyonunun etkili bir şekilde tedavi edilmesini zorlaştıran önemli bir faktördür. Gastroparezinin patofizyolojisi antral hipomotilite, gastrik disritmiler, pilorik disfonksiyon ve duodenal dismotilite gibi çeşitli faktörleri içerir. GPS'li hastalarda görülen çok sayıda anormallik, enterik, nörolojik, enflamatuar, immün/genetik ve serozal/hormonal yollar dahilinde terapötik müdahaleler için fırsatların yanı sıra ek zorluklar da sunmaktadır.

Günümüzde mide boşalmasını ölçmek için kullanılan testler değişiklik göstermektedir ve radionüklidler, nefes testleri veya kablosuz kapsüller gibi transit ölçümlerini içermektedir. Yeni radionüklid mide teknikleri, proksimal mide boşalması/mide adaptasyonu ve antral kasılmaları ölçerek, mide boşalmasının belirti şiddetini yansıtmadığı durumlarda dahi, bu süreçleri hedef alan terapilerden fayda görebilecek hastaların daha iyi tanımlanmasına olanak tanır. Gastrik elektrofizyolojinin ölçüldüğü mide elektriksel testleri gibi ek yardımcı testler, belirtilere neden olan faktörlerin daha ayrıntılı olarak belirlenmesine yardımcı olur. Altta yatan belirtilere neden olan faktörlerin doğru bir şekilde tespiti, hastaların farklı terapiler için daha iyi seçilmesine ve hastaların daha iyi sonuçlar elde etmesine yol açabilir.

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