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Peptik ülser perforasyonunda mortalite ile ilişkili faktörlerin değerlendirilmesi: Retrospektif vaka-kontrol çalışması

Evaluation of mortality related factors in peptic ulcer perforation: Retrospective case-control study

Ahmet Topçu, Ali Ediz Kıvanç, İlyas Kudaş, Abdullah Şişik, Yahya Özel, Aylin Acar, Fatih Başak, Fikret Ezberci

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Öz

Amaç: Peptik ülser tedavisinde güncel medikal tedavilerde belirgin ilerleme olmasına rağmen, peptik ülsere bağlı perforasyon insidansında bir değişiklik olmadığı görülmüştür. Peptik ülser perforasyonu mortalite oranları nedeniyle acil başvurularda önemli bir yer tutmaktadır. Bu çalışmada, peptik ülser perforasyonuna bağlı mortalite ile ilişkili faktörlerin tespit edilmesi amaçlanmıştır.

Gereç ve Yöntemler: Gözlemsel tipte çalışma planlandı. 2009-2016 yıllarında peptik ülser perforasyonu nedeniyle ameliyat olan hastalar çalışmaya uygunluğu için değerlendirildi. Örneklem sayısı %90 güvenlik aralığında %5 α hata ile %30 farkı göstermek için 225 olarak belirlendi. Hatayı azaltmak için 20 hasta eklendi. Hastaların demografik verileri, kronik hastalık varlığı (diabet, kardiak), sigara kullanım durumu, non-steroid antiinflamatuar ilaç kullanımı, başvuru lökosit sayısı, şikayet başlangıcı-ameliyat arası zaman ve cerrahi alan enfeksiyonu varlığı kayıtlardan tarandı. Perioperatif dönemde (ilk bir ay) mortalite olması, ana değerlendirme parametresi olarak belirlendi. Hastalar mortaliteye göre iki gruba ayrıldı (Grup 1: çalışma grubu, Grup 2: kontrol grubu).Analizlerde tanımlayıcı istatistikler, sayı, yüzde, ortalama±standart sapma, medyan (çeyreklik aralığı) ve karşılaştırmalar için t-test, Mann-Whitney, Fisher's exact ve Ki-kare testi kullanıldı. %95 güvenlik aralığında p değerinin 0,05'den küçük olması anlamlı kabul edildi.

Bulgular: Çalışmaya 245 hasta (grup1: 11(%4,5), grup2: 234(%95,5)) alındı. Gruplar arasında cinsiyet (grup1: E/K=1,2, grup2: E/K=6,1) ve yaş (grup1: 62,8±16,6 yıl, grup2: 40±16,8 yıl) açısından fark saptandı (p=0,016, p=0,0001). Kronik kardiak hastalıkların çalışma grubunda daha sık olduğu görüldü (p=0,0001).Diabet varlığı, sigara ve non-steroid antiinflamatuar ilaç kullanımı açısından fark saptanmadı (sırasıyla, p=0,092, p=0,624, p=0,214). Lökosit sayısının çalışma grubunda düşük olduğu görüldü (grup1: 9 (10) bin/mm3, grup2: 13 (6) bin/mm3, p=0,032). Şikayet başlangıcı-ameliyat arası geçen zaman süresi çalışma grubunda yüksekti (grup1:12 (14) saat, grup2:4 (4) saat, p=0,0001). Tüm hastalara Graham usulü primer kapama onarımı yapıldı ve dren konuldu. Ameliyat sonrası yatış süresi gruplar arasında benzerdi (grup1:4 (5) gün, grup2:5 (2) gün, p=0,443). Cerrahi alan enfeksiyonu çalışma grubunda daha sık görüldü (p=0,008).

Sonuç: Kadın cinsiyet, ileri yaş, kronik kalp hastalığı olan peptik ülser perforasyonu olan hastalarda yüksek mortalite riski nedeniyle daha dikkatli olunmalıdır.

Anahtar Kelimeler: Akut batın, Peptik ülser perforasyonu, Mortalite

Abstract

Aim: Although there has been significant progress in current medical treatments for the treatment of peptic ulcer, there has been no change in the incidence of peptic ulcer perforation. Peptic ulcer perforation has an important place in urgent surgery due to mortality rates. In this study, it was aimed to determine the factors related to death related to peptic ulcer perforation.

Material and Methods: Observational type study was planned. Patients who underwent surgery due to peptic ulcer perforation in 2009-2016 were included to the study. The number of samples was set at 225 to show 30% difference with a 5% α error at 90% safety interval. Twenty patients were added to reduce the error. Patients were screened for demographic data, presence of chronic disease (diabetes, cardiac), smoking status, nonsteroidal anti-inflammatory use, reference leukocyte level, complaint-to-intervention time and surgical site infection. Mortality in the perioperative period (first month) was determined as the main outcome parameter. Patients were divided into two groups according to the presence of death (Group 1: study group, Group 2: control group). Descriptive statistics, number, percentage, mean ± standard deviation, median (quartile range) were used for statistics. T-test, Mann-Whitney, Fisher's exact and Chi-square tests were used for comparisons. A p value of less than 0.05 was considered significant at 95% safety interval.

Results

245 patients (group 1: 11 (4.5%), group 2: 234 (95.5%) were included in the study. There was significant differences with regard to the distribution of gender (group 1: Male/Female=1,2, group 2: Male/Female=6,1) and age (group 1: 62,8±16,6 years, group 2: 40±16,8 years) between the groups (p=0.016 and p=0.0001, respectively). Chronic cardiac diseases were more common in the study group (p=0.0001). There was no difference in the presence of diabetes, smoking, and nonsteroidal anti-inflammatory use (p=0.092, p=0.624 and p=0.214, respectively). Leukocyte counts were found to be low in the study group (group 1: 9 (10) thousand/mm3, group 2: 13 (6) thousand/mm3, p=0.032). Time period between the beginning of complaints and operation were higher in the study group (group 1: 12 (14) hours, group 2: 4 (4), p=0.0001). All the patients were repaired by Graham type primary closure and drains were used in all. The duration of post-operative stay was similar between the groups (group 1: 4 (5) days, group 2: 5 (2) days, p=0.443). Surgical site infections were more frequent in the study group (p=0.008).

Conclusion: In patients with female gender, advanced age, and chronic heart disease, more caution should be given due to the high mortality risk in peptic ulcer perforation.

Keywords: Acute abdomen, Peptic ulcus perforation, Mortality

Ethical Commitee Approval: Due to retrospective design of the study, no ethical approval has been taken.
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Giriş

Peptik ülserde H_2 reseptör blokerleri ve proton pompa inhibitörleri gibi tedavilerin kullanıma girmesinden sonra, hastalık için uygulanan tedavi protokolleri belirgin olarak değişmiştir. Bu süreçte elektif ülser cerrahisinde belirgin azalma görülürken, peptik ülser komplikasyonlarında paralel bir azalma görülmemiştir [1, 2]. Peptik ülsere bağlı gelişen komplikasyonlar dikkate alındığında; kanama özellikle 40 yaş üstü hastalarda yüksek mortalite nedeniyle önem kazanmaktadır. Diğer sık görülen komplikasyon peptik ülsere bağlı perforasyon (PUP) olup, önemli morbidite ve mortaliteye sebep olabilmektedir. Ayrıca PUP acil başvurularda sıklığı, tanı ve tedavisindeki yöntemler açısından önemli bir yer tutmaktadır [2, 3].

Literatürde, PUP hastalarında oluşabilecek morbidite ve mortalite ilişkili faktörleri değerlendiren retrospektif ve prospektif çalışmalar bulunmaktadır. Yaş, cinsiyet, uygulanan cerrahi yöntem, böbrek ve karaciğer yetmezliği gibi kronik hastalık varlığı ile morbidite ve mortalite ilişkisi konusunda faklı sonuçlar bildiren çalışmalar mevcuttur [4-6].

Bu çalışmada, PUP'a bağlı ölüm ile ilişkili faktörlerin tespit edilmesi amaçlanmıştır.

Gereç ve Yöntemler

Retrospektif olarak değerlendirilecek şekilde vaka-kontrol çalışması planlandı. Hastanemiz acil cerrahi kliniğine 2009-2016 yıllarında karın ağrısı şikayetiyle başvuran ve PUP nedeniyle ameliyat edilen hastalar çalışmaya alındı. Örneklem sayısı %90 güvenlik aralığında %5 α hata ile %30 farkı göstermek için 225 olarak belirlendi. Hatayı azaltmak için 20 hasta eklendi ve sonuçta toplam 245 hasta örneklem sayısı olarak alındı.

Hastaların demografik verileri, kronik hastalık varlığı (diabet, kardiak), sigara kullanım durumu, non-steroid antiinflamatuar ilaç (NSAİİ) kullanımı, başvuru lökosit seviyesi, şikayet başlama-ameliyat arası süre ve cerrahi alan enfeksiyonu (CAE) varlığı kayıt edildi. Tüm veriler hastane kayıt sistemi üzerinden tarandı. Verilerinde eksiklik tespit edilen hastalar çalışma dışı tutuldu.

Perioperatif dönemde (ameliyat öncesi ve sonrası ilk bir ay) oluşan mortalite, ana değerlendirme parametresi olarak belirlendi. Hastalardaki mortalite varlığı hastane kayıt sistemi üzerinden veya telefon yoluyla iletişim ile kayıt altına alındı. Hastalar mortaliteye göre iki gruba ayrıldı (Grup 1: çalışma grubu, Grup 2: kontrol grubu).

İstatistik

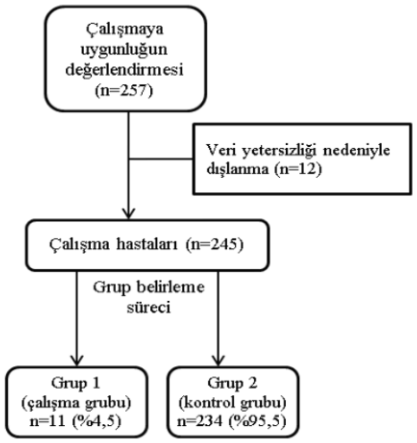
Çalışmada elde edilen bulgular değerlendirilirken, istatistiksel analizler için Statistics Package for Social Sciences (IBM SPSS statistics version 23, IBM Corporation, USA) ve Power Analysis and Sample Size (PASS 2008 Statistical Software, Utah, USA) istatistiksel paket programları kullanılmıştır. Verilerin analizinde tanımlayıcı istatistikler, sürekli değişkenler için ortalama ve standart sapma, kategorik veriler için ise sayı ve yüzde kullanıldı. Çalışmada normal dağılım gösteren verilerin karşılaştırmasında t-test kullanıldı. Normal dağılım göstermeyen parametrelerin gruplar arası karşılaştırmalarında Mann Whitney U test kullanıldı. Niteliksel verilerin karşılaştırılmasında ise Ki-Kare testi ve Fisher's Exact testi kullanıldı. Sonuçlar % 95'lik güven aralığında, anlamlılık $p<0.05$ düzeyinde değerlendirildi.

Bulgular

Çalışmada öncelikle uygunluk için PUP nedeniyle ameliyat edilen 257 hasta değerlendirildi. On iki hasta, hastane kayıt sistemindeki eksik verilerinden dolayı çalışma dışı tutuldu. Sonuç olarak hedeflenen örneklem sayısına(245 hasta) ulaşıldı. Çalışmanın akış şeması resim 1'de gösterilmiştir. Hastaların 207'si (%84,5) erkek, 38'i (15,5%) kadın olup, yaş ortalamaları 41±17,4 idi. Mortalite tespit edilen 11 (%4,5) hasta grup 1'i oluşturdu. Geriye kalan 234 (%95,5) hasta grup 2'yi oluşturdu.

Grupların değerlendirilen verilerinin dökümü tablo 1'de gösterilmiştir. Grup 1'de erkek/kadın oranı 1,2, yaş ortalaması 62,8±16,6 yıl, grup 2'de erkek/kadın oranı 6,1 ve yaş ortalaması 40±16,8 yıl idi. Gruplar arasında cinsiyet ve yaş açısından fark saptandı (p sırasıyla 0,016 ve 0,0001). Grup 1 hastalarında daha sık kadın cinsiyet ve ileri yaş tespit edildi. Kronik kardiak hastalıkların çalışma grubunda (grup 1) daha sık olduğu görüldü (p=0,0001). Diabet varlığı, sigara ve NSAİİ kullanımı açısından fark saptanmadı (p=0,092, p=0,624, p=0,214). Lökosit sayısının çalışma grubunda düşük olduğu görüldü (grup 1: 9 (10) bin/mm3, grup 2: 13 (6) bin/mm3, p=0,032). Şikayet başlangıcı ile ameliyata kadar geçen süre çalışma grubunda yüksekti (grup 1: 12 (14) saat, grup 2: 4 (4) saat, p=0,0001). Tüm hastalara Graham usulü primer kapama onarımı yapıldı ve dren konuldu. Ameliyat sonrası yatış süresi gruplar arasında benzerdi (grup 1: 4 (5) gün, grup 2: 5 (2) gün, p=0,443). CAE çalışma grubunda daha sık görüldü (p=0,008).

Resim 1: Akış şeması



Tablo 1: Grupların çalışmada değerlendirilen verileri ve istatistiki sonuçları

	Grup 1 (n=11)	Grup 2 (n=234)	p [1,2]
Yaş (ortalama±SD)	62,8±16,6	40±16,8	0,0001
Cinsiyet (E/K)	1,2	6,1	0,016
	n (%)	n (%)	p [2,3]
Kronik hastalık (Kardiak hastalık veya diabet)	8 (72,7)	63 (26,9)	0,003
Kardiak hastalık	8 (72,7)	31 (13,2)	0,0001
Diabet	4 (36,4)	37 (15,8)	0,092
Sigara kullanımı	8 (72,7)	168 (71,8)	0,624
NSAİİ kullanımı	7 (63,6)	108 (46,2)	0,214
Cerrahi alan enfeksiyonu	5 (45,5)	28 (12)	0,008
	Ortanca (ÇA)	Ortanca (ÇA)	p [4]
Lökosit: bin/mm^3	9 (10)	13 (6)	0,032
Şikayet-ameliyat arası süre: saat	12 (14)	4 (4)	0,0001
Yatış süresi gün	4 (5)	5 (2)	0,443

SD: Standart sapma, E: Erkek, K: Kadın, NSAİİ: Non-steroidal anti-inflamatuar ilaç, ÇA: Çeyreklik aralığı, [1] t-test, [2] Ki-kare, [3] Fisher's exact test, [4] Mann Whitney U test

Tartışma

Çalışmamızda PUP hastalarında mortaliteyi etkileyen faktör olarak kadın cinsiyet, ileri yaş, kronik hastalık varlığı ve kronik kalp hastalığı varlığı tespit edildi. Ayrıca düşük lökosit sayısı, şikayet başlangıcı ile ameliyat arası geçen sürenin fazla olması ve CAE mortalite ile ilişkili bulundu.

Peptik ülserlerin elektif cerrahi tedavisi etkin medikal tedaviler (H_2-reseptör blokerleri ve proton pompa inhibitörleri) sonrasında belirgin olarak azalmıştır. Fakat kanama veya perforasyon gibi komplikasyonlarda azalma görülmemiştir. Ayrıca yıllar içerisinde morbidite ve mortalite oranlarında çok az değişiklik görülmüştür [7, 8].

PUP için uygulanabilecek cerrahi yöntemler çok çeşitli olup, primer onarım etkinliği nedeniyle popülerlik kazanmıştır. Önceki yıllarda rezeksiyon içeren cerrahi yöntemler kullanılırken, bu değişiklik sürecinde primer onarım en sık uygulanan yöntem olarak görülmektedir [9-11]. Bu çalışmada, literatürdeki trend ile uyumlu olarak tüm PUP hastalarına primer onarım (Graham usulü primer kapama) yapıldığı görüldü.

PUP cerrahisinde mortalite oranları %2-6 arasında değişmekle birlikte %30'a kadar çıkabilmektedir [12-14]. Bizim serimizde mortalite sadece 11 hastada (%4,5) gözlendi. Bu mortalite oranı kabul edilebilir ve literatürle uyumludur. Birçok yayında morbidite ve mortalite ile ilişkili faktörler olarak yaş, cinsiyet, cerrahi tipi, kronik hastalık, ilaç ve alkol kullanımı, perforasyon süresi, kan basıncı, eşlik eden hastalık, böbrek yetmezliği ve karaciğer sirozu saptanmıştır [13-16]. Benzer şekilde, mevcut çalışmada yaş, cinsiyet, kronik hastalık varlığı ve şikayet-ameliyat arası geçen süre mortaliteyle ilişkili bulundu.

NSAİİ'ler analjezik, anti-inflamatuar ve anti-piretik etkileri için yaygın olarak kullanılmaktadır. NSAİİ kullanımının PPU riskini arttırdığı bilinmektedir. Kronik NSAİİ kullanıcılarının yaklaşık dörtte biri PUP geliştirecek ve %2-4'ü kanama veya perforasyona sebep olacağı ön görülmektedir [17]. Steroidler ve seçici serotonin geri alım inhibitörleri ile ilaç etkileşimi de PUP riskini arttırır. Seçici siklo-oksijenaz-2 inhibitörleri PUP ile daha az ilişkilidir [18]. Sigaradaki tütünün pankreatik bikarbonat salınımını inhibe ettiği düşünülür ve duodenumda asiditeyi arttırır [19]. Aynı zamanda duodenum ülserlerinin iyileşmesini de engeller. Bir meta-analiz, peptik ülser hastalığının %23'ünün sigarayla ilişkili olabileceğini gösterdi [20]. Bununla birlikte, bazı çalışmalarda, sigara içen ve içmeyen hastalar arasında fark bulunmamıştır. Çalışmamızda NSAİİ ve sigara içimi ile perforasyon riski açısından ilişki değerlendirilmedi ancak mortalite arasında ilişkili bulunamadı.

Hastaların şikayet başlangıcı ile ameliyat arasındaki geçen süre, literatürde mortalite için diğer bir risk faktörü olarak bildirilmiştir [21, 22]. Çalışmamızda da literatür ile uyumlu olarak ilgili süre ve mortalite arasında ilişki bulundu.

Çalışmamızda belirli kısıtlamalar bulunmaktadır. Çalışmanın retrospektif olması, mortalite ile sonuçlanan hasta sayısındaki azlık nedeniyle yapılan istatistiklerde oluşabilecek hata payının bulunması kısıtlayıcı faktörler olarak sayılabilir. Bu kısıtlamaları aşmak ve çalışmamızda bulunan verileri desteklemek için daha geniş seriler içeren randomize klinik çalışmalara ihtiyaç bulunmaktadır.

Sonuç olarak, PUP önemli bir mortalite sebebi olmaya devam etmektedir ve özellikle kadın cinsiyet, ileri yaştaki hastalarda dikkatle takip edilmelidir.

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Day-case surgery for inguinal hernia: Lichtenstein inguinal hernia repair under local anesthesia performed by surgical residents

İnguinal herninin günübirlik cerrahisi: Cerrahi asistanları tarafından lokal anestezi altında gerçekleştirilen Lichtenstein inguinal herni onarımı

Ismail Ege Subasi [1], Metin Yucel [1], Mustafa Hasbahceci [2], Fatih Basak [1], Orhan Alimoglu [3]

Abstract

Aim: Lichtenstein inguinal hernia repair with local anesthesia as a day-case surgery is one of aspects of education in inguinal hernia surgery as a surgical training program. In this study, we aimed to present these surgery performed by residents.

Material and Methods: Forty years and older male patients diagnosed as primary inguinal hernia were included prospectively between June 2009 and March 2011. Surgical outcomes with respect to recurrence and chronic postoperative pain were studied.

Results: There were 151 patients with a mean age of 55.7±10.8. Intraoperative evaluation revealed direct in 84 (55.6%), indirect in 58 (38.4%) and combined hernia in nine (6.0%). Mean operation time was 51.2±13.2 minutes which was significantly higher in obese patients ($p<0.05$). Patients were discharged at postoperatively eight hours or less in 143 (94.7%). Most of the patients (90.7%) were reported to choose local anesthesia again. Eleven and four patients reported pain scores of 0.23±0.7 (range 0-4) and 0.07±0.4 (range 0-3) at 6th and 12th month evaluations, respectively. At the postoperative 1st day, 137 (90.7%) patients could return to daily activities. There were 28 (18.5%) hematoma and seroma formation, and 18 (11.9%) wound infection. There was no mesh reaction; however, two (1.3%) recurrences were detected after one year of the operation.

Conclusion: Lichtenstein inguinal hernia repair under local anesthesia as a day case surgery should be chosen as a primary treatment method, and can be performed by surgical residents under supervision in a safe manner.

Keywords: Hernia repair, Local anesthesia, Day-case surgery

Öz

Amaç: Lokal anestezi ile günü birlik cerrahi olarak uygulanan Lichtenstein inguinal herni onarımı, cerrahi eğitim programı kapsamın yapılan eğitimlerin başında gelmektedir. Bu çalışmada, asisten hekimlerin yaptığı bu ameliyatı incelemeyi amaçladık.

Gereç ve Yöntemler: Primer inguinal herni tanısı alan 40 yaş ve üstü erkek hastalar, Haziran 2009-Mart 2011 arasında ileriye dönük olarak çalışmaya dahil edildi. Tekrarlama ve kronik postoperatif ağrı açısından cerrahi sonuçlar çalışıldı.

Bulgular: Yaş ortalaması 55,7±10,8 olan 151 hasta vardı. İntraoperatif değerlendirme 84 (%55,6) direk fıtık, 58 (%38,4) indirekt ve dokuz (%6,0) direk-indirekt fıtık birlikteliği vardı. Ortalama operasyon süresi 51,2 ±13,2 dakikaydı ve bu obez hastalarda anlamlı derecede yüksekti ($p<0,05$). Postoperatif dönemde 143 (%94,7) hasta, ilk sekiz saat içinde taburcu edildi. Hastaların çoğu (%90,7) lokal anesteziyi tekrar seçeceğini ifade etti. Onbir hastanın ağrı skoru 6. ve 12. ay değerlendirmelerinde 0,23±0,7 (dağılım 0-4) ve 0,07±0,4 (dağılım 0-3) olarak tespit edildi. Postoperatif 1. günde, 137 (%90,7) hasta günlük aktivitelerine geri döndü. 28 (%18,5) hematom ve seroma oluşumu ve 18 (%11,9) yara enfeksiyonu vardı. Mesh reaksiyonu saptanmadı; Ancak bir yıl operasyondan sonra iki (%1.3) rekürrens tespit edildi.

Sonuç: Lichtenstein inguinal herni onarımı, lokal anestezi altında günlük cerrahi girişim olarak birincil tedavi yöntemi olarak seçilmeli ve ameliyat asistanlar tarafından gözetim altında güvenli bir şekilde yapılabilir.

Anahtar kelimeler: İnguinal herni onarımı, Lokal anestezi, Günübirlik cerrahi

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Introduction

Inguinal hernia repair is one of the most commonly performed operations in general surgery [1-5]. After introduction of mesh for inguinal hernia repair, recurrences have been decreased to 5% or less [4]. But, postoperative chronic pain is getting more importance which has been reported in 25 to 30 % of the patients, and caused limitations during daily life in 5 to 8% of the patients [1,6,7].

The most commonly used mesh type is polypropylene, however, because of high incidence of chronic postoperative pain after inguinal hernia surgery, new meshes and fixation techniques are emerged.[1,4] Reducing the polypropylene content and increasing the pore size of the mesh is supposed to offer better outcomes in regard to the pain. Low-weight polypropylene mesh (lightweight mesh) is considered mostly as an appropriate choice [1,6,8].

Early mobilization, shorter length of hospital stay and less postoperative complications have been reported in patients operated under local anesthesia. Local anesthesia is reported as a safe method especially for the patients with high anesthetic risk (general or spinal) [2,5]. Inguinal hernia repair is common operation performed mostly in early period of surgical residency under supervision by attending consultants; however results of operations performed by surgical residents are not evaluated in detail [9].

Aim of this study was to evaluate outcomes of Lichtenstein inguinal hernia repair with local anesthesia as a day-case surgery performed by residents.

Materials and methods

Forty years and older male patients with a primary inguinal hernia were included prospectively. This study was approved by the local ethic committee. Preoperatively, all patients were informed about the surgical technique and written consent was taken. Patients with bilateral, scrotal or recurrent hernias, female patients, patients younger than 40-years-old were excluded from the study. Patients were grouped according to their ages as decades, and divided into three according to their body mass index (BMI) results as normal (BMI<25kg/m2), overweight (BMI 25-29.99kg /m2) and obese (BMI>30kg/m2). Length of stay in hospital was evaluated as less than 8 hours or more.

Lichtenstein inguinal hernia repair under local anesthesia was performed by surgical residents with supervision by the consultant surgeon. Before the study, several Lichtenstein inguinal hernia repairs were performed by consultant surgeons to teach technical details to the residents which were in postgraduate years 2 or more. Prophylactic antibiotics were not administered. Polypropylene lightweight mesh with a dimension of 6 to 11 cm (Parietene, Tyco Healthcare, Trevéoux, France, 40g/m2) was used for the study. Hair removal of the operative area was performed at the time of the operation. A 1:1:2 mixture of lidocaine with adrenaline (lidocaine HCl 20 mg/ml, adrenaline HCI 0.0125 mg/ml) (Jetokain, Adeka, Turkey), bupivacaine (Marcaine vial, AstraZeneca, Turkey) and normal saline was prepared. From this mixture, 10 ml was injected to the point at the 2 cm medial to the anterior superior iliac spine, 10 ml to the lateral side of symphisis pubis and to incision line. Tracings of ilioinguinal and iliohypogastric nerves were also anesthetized. For indirect hernia, high dissection and ligation of the hernia sac were performed. For direct hernia, plication of the hernia sac was applied. Mesh was located between inguinal ligament and conjoined tendon by 3/0 polypropylene suture.

Analgesics were not given to the patients unless they needed, and Paracetamol 500 mg per oral was choice of medication. All patients were discharged at postoperative 8th hours. But in cases of clinical necessity, the discharge was delayed. For the follow-up period, the patients were re-evaluated at 7th day, 4th week, 6th month and 12th month.

In this study, wound infection defined as presence of hyperemia over the incision and/or purulent drainage from the wound. In cases of hyperemia and drainage without infective findings lasting more than one month called as mesh reaction. Return time to normal daily activity was defined as the day in which patient can have ability to make his normal daily activities alone. Postoperative pain was evaluated with visual analog scale (VAS) and graded from no pain as 0 to the maximum pain as 10. Degree of satisfaction with local anesthesia was evaluated as very good, good, moderate, bad and very bad. Each patient was asked for his future preference of local anesthesia again as yes or no. Chronic postoperative pain was defined as the pain lasting more than 3 months in the absence of recurrence.

The parameters which were evaluated in this study were family history for inguinal hernia, BMI, American Society of Anesthesiology score (ASA), features of inguinal hernia such as side, type (indirect, direct or combined) and diameter, operation time, postoperative pain, hematoma and seroma formation over the wound, development of wound infection, length of stay in hospital, time to return to normal daily activity, mesh reaction, degree of satisfaction with local anesthesia and recurrence.

Statistics

Statistical analyses were performed through a computerized software package using Excel (Office XP from Microsoft). Statistical calculations were performed using NCSS (Number Cruncher Statistical System, 2007) and PASS Statistical soft-ware (Utah, USA, 2008). One-vay Anova test was used for analysis of normally distributed descriptive continuous variables which were expressed as mean±standard deviation (SD), median, frequencies and ranges. Mann-Whitney U test was used for comparison of descriptive variables without normal distribution. Tukey's HDS test was used to detect the groups which cause the difference. The Chi-square test was used to assess an association between qualitative variables. Differences were considered statistically significant if the p value was equal to or less than 0.05.

Results

There were 165 patients undergoing Lichtenstein inguinal hernia repair under local anesthesia between June 2009 and March 2011. Patients with successful application of local anesthesia and successful follow-up records composed the study group (n=151). Patients' demographic variables are detailed in Table 1. Mean age of the patients was 55.7±10.8 with a range of 40 to 90.

Hernias were present at the right and the left sides in 77 (51%) and 74 (49%) patients, respectively. Intraoperative evaluation of the hernias revealed direct hernia in 84 (55.6%), indirect in 58 (38.4%) and combined hernia in nine (6.0%). Mean diameter of the hernias was 4.9±2.4 cm with a range of 1 to 15 cm.

Table 1: Demographic variables of the patients.

		n	%
Age groups (year)	40-49	53	35.1
	50-59	44	29.1
	60-69	37	24.5
	≥70	17	11.3
BMI ($kg/m^{2)}$	Normal (<25)	53	35.1
	Overweight (25-29.99)	75	49.7
	Obese (>30)	23	15.2
Family history	Positive	45	29.8
	Negative	106	70.2
ASA score	1	95	62.9
	2	47	31.1
	3	8	5.3
	4	1	0.7

BMI: Body mass index, ASA: American Society of Anesthesiology Score

Mean operation time was 51.2±13.2 minutes. On obese patients, operation time was significantly higher than the others ($p<0.05$). Patients were discharged at postoperatively 8 hours or less in 143 (94.7%), while others were discharged after this period. Degree of satisfaction and future preference of local anesthesia of the patients were given in Table 2. In general, 90.7% of the patients were reported to choose local anesthesia again.

Postoperative pain scores were ranged from 0 to 6 with a mean score of 1.3±1.5 postoperatively at the 7th day. These scores decreased to 0.58±1.1 with a range of 0 to 6 at 4th week evaluation. Eleven and four patients were reported some degree of pain at 6th and 12th month evaluations (Table 3). At the postoperative 1st day, 137 (90.7%) patients could return to daily activities. Eleven (7.3%) and three (2%) patients reported this interval as 2nd and 3rd postoperative days, respectively. There were 28 (18.5%) hematoma and seroma formation in which five of them were evacuated by surgical exploration. Wound infection was developed in 18 (11.9%) patients that all were managed conservatively with antibiotic treatment. There was no mesh reaction; however, two (1.3%) recurrences were detected after one year of the operation.

Table 2: Degree of satisfaction and future preference of local anesthesia.

		n	%
Degree of satisfaction	Very good	81	53.6
	Good	43	28.5
	Moderate	8	5.3
	Bad	4	2.6
	Very bad	15	9.9
Future preference	Yes	137	90.7
	No	14	9.3

Table 3: Postoperative pain scores.

Time	n	Range	Mean±Standard deviation
7th day	21	0-6	1.3±1.5
4th week	18	0-6	0.6±1.1
6th month	11	0-4	0.23±0.7
12th month	4	0-3	0.07±0.4

Discussion

Performance of Lichtenstein inguinal hernia surgery under local anesthesia as a day-case surgery is accepted as the standard policy in many specialized and non-specialized centers [1,9-12]. The advantages of local anesthesia over general anesthesia are well documented with regard to less postoperative pain, lack of detrimental effect on pulmonary function, early mobilization helping to day-case surgery facilities [5,10,13,14]. In general, it was accepted that excellent outcomes in primary hernia repair could be achieved by using tension free open technique with local anesthesia [4,15].

Most of the inguinal hernia surgeries have been performed in outpatient clinics [13,14]. Local anesthesia has been also preferred method because of its advantage for patients such as less postoperative pain, early recovery and mobilization, and lack of specific complications of spinal and general anesthesia [13]. In the present study, it was possible to perform 94.7% of the operations as day case surgery. It was thought that use of local anesthesia was more important than the other parameters such as use of lightweight mesh or the type of the operation to reach this high rate.

Polypropylene based mesh materials used in hernia surgery help in strengthening the weakened native tissues by fibroplastic mesh-aponeurotic scar tissue complex [1,8,16]. But this inflammatory process may lead to some undesirable sequelae such as chronic pain and postoperative foreign body sensation [17]. It was suggested that reducing the polypropylene content and increasing pore size of the mesh were beneficial to diminish these unwanted effects secondary to the use of meshes [1,8]. However, these findings were usually come from animal studies, and there was some suspicion about the possible high rate of the recurrences following use of lightweight meshes weighing 35 to 50 g/m2, which could be explained by the technical factors [1,8,16,18-20].

Although assessment of inguinal hernia surgery has focused on recurrence, complications and costs, more recently there was an increased attention on chronic pain, discomfort and quality of life [21]. Definition of chronic pain relies on its chronicity lasting usually more than 3 months; however, there are several reports with different definitions of chronic pain indicating difficulty in classification, grading and measurement [1,2,10,21]. Patient-reported outcomes such as pain were believed to be an important index for improving outcomes in hernia surgery [8]. In this study, as a patient-reported outcome, the pain lasting more than 6 months was accepted as chronic postoperative pain which were seen in 11(7.3%) and four (2.7%) patients after 6 months and one year, respectively. Our rates were also comparable to the other studies that chronic postoperative pain was reported to occur in between 10-30% of the patients [2,9,22]. We thought that chronic postoperative pain was mild in nature, since over 90% of the patients were very satisfied in general, and the maximum pain score was up to 3 and 4. Use of lightweight mesh might be an important factor to get low rate of chronic postoperative pain in accordance with others [4,8].

Recurrences after Lichtenstein inguinal hernia repair were reported as low as 1 to 2 % in large series [23]. Although it was believed that specialization for inguinal hernia repair had positive effect to decrease the recurrence rates, it was also shown that this operation could be performed with low recurrence rates by non-specialized surgeons, even general practitioners with a special interest [1,14,15]. It was reported that Lichtenstein inguinal hernia repair could be performed alone by residents if a precise teaching organization by an experimented surgeon is available [9]. However, there were several reports indicating higher recurrence rates up to 7 % in cases of such operations performed by junior residents in comparison to senior residents with a recurrence rate of 1.1% [24]. In the present study, 1.3% recurrence was detected during the first year that was comparable to the other studies [23]. But longer follow-up period is needed to confirm a more accurate risk with regard to possible risk factors for recurrence such as use of the lightweight meshes and performance by residents.

Postoperative seroma and hematoma formation could be seen after inguinal hernia surgery, but it was reported more commonly after Prolene Hernia System or Perfix usage [10,14]. Wound infection is another important complication for inguinal

hernia surgery which was reported as up to 10% of the patients [14]. Although our complication rates were higher than the previously reported rates, lack of prophylactic antibiotic usage and acceptance of even hyperemia over the incision as a criterion for infection might be explanations for this issue. Lack of control group which included the cases performed by the consultant surgeons and short follow-up period especially for recurrence were the limitations of this study.

In conclusion, Lichtenstein inguinal hernia repair under local anesthesia as a day case surgery should be chosen as a primary treatment method, and can be performed by surgical residents under supervision in a safe manner.

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Colonic cancers fistulised to other segments of the gastrointestinal tract. Case series and review of literature.

Diğer sindirim yolu bölümlerine fistül oluşturan Kolonik kanserler. Olgu serisi ve literatür derlemesi.

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Abstract

Background: Occurrence of enteric fistulas caused by colon cancer is a rare. Preoperative diagnosis has some difficulty because of non-specific presentation and lack of appropriate combination of diagnostic techniques.

Methods: From November 2008 to April 2012, patients with entero-enteric fistulas caused by colon cancer were reviewed with regard to demographic variables, clinical presentation, diagnostic evaluation, intra-operative findings, type of surgical procedure and pathologic examination.

Results: There were four (3.92%) fistulas caused by colon cancer among 102 patients with adenocarcinoma of the colon. Fistulas were one colo-duodenal, one colo-gastric, one ceco-sigmoidal and one sigmoido-rectal in patients with a mean age 56.5 years. Presence of fistulas was not diagnosed preoperatively in any of the patients by using standard diagnostic techniques, i.e., endoscopy and computed tomography. Complete resection of tumor with tract of fistula was performed in all patients. Mean duration of follow-up period was 12.25 months, liver metastasis was detected in one patient, entero-cutaneous fistula in one.

Conclusions: Malignant fistula formation caused by colon cancers is a rare event. Preoperative diagnosis could be achieved by using a combination of barium enema or meal and endoscopy. Surgical treatment via oncologic en-bloc resection with negative microscopic margins is important for long-term survival.

Key words: adenocarcinoma, colon, fistula, enteroenteric, coloduodenal, cologastric

Öz

Giriş: Kolon kanserinin sebep olduğu enterik fistüller nadir görülür. Ameliyat öncesi tanı, spesifik olmayan sunum ve uygun tanı teknikleri kombinasyonu bulunmaması nedeniyle bir miktar zorluk çekmektedir.

Yöntemler: Kasım 2008 - Nisan 2012 arasında demografik değişkenler, klinik tablo, tanı değerlendirme, intraoperatif bulgular, cerrahi girişim tipi ve patolojik inceleme açısından entero-enterik fistüllü hastalar gözden geçirildi.

Bulgular: Kolon adenokarsinomalı 102 hasta içinde kolon kanserine bağlı dört fistül vardı (%3.92). Yaş ortalaması 56.5 olan hastalarda bir kolo-duodenal, bir kolo-gastrik, bir ceco-sigmoidal ve bir sigmoid-rektal fistül görüldü. Fistüllerin varlığı, standart tanı teknikleri, yani endoskopi ve bilgisayarlı tomografi kullanılarak preoperatif olarak teşhis edilemedi. Bütün hastalarda tümör-fistül dokusu rezeksiyonu yapıldı. İzlem süresi ortalama 12.25 ay, bir hastada karaciğer metastazı, bir hastada entero-kutanöz fistül saptandı.

Sonuçlar: Kolon kanserlerinden kaynaklanan malign fistül oluşumu nadir görülen bir olaydır. Ameliyat öncesi tanı, baryum lavman veya yemek ve endoskopi kombinasyonu kullanılarak başarılabilir. Onkolojik en blok rezeksiyon ve negatif mikroskobik cerrahi sınır, uzun süreli sağkalım için önemlidir.

Anahtar kelimeler: adenokarsinom, kolon, fistül, enteroenterik, koloduodenal, kologastrik

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Introduction

Colon cancers may form fistulas to the other gastrointestinal organs by direct extension showing local aggressiveness of the tumor [1, 2]. Occurrence of such complication has been reported as a very rare event in the literature [2-4]. Besides specific symptoms of the colon cancers, patients with fistulas may present with clinical findings changing according to the organs that fistula formation develops. Although preoperative diagnosis of fistula formation may be difficult due to non-specific clinical presentation, it can be diagnosed readily by endoscopic and radiologic imaging of the gastrointestinal tract in selected patients [1, 5]. Current treatment modality for such tumors includes en-bloc resection of the tumor and fistulous tract [2, 4].

In this paper, we aim to review our colon cancers forming fistulas to the other gastrointestinal organs with regard to the clinical presentation, operative findings and treatment outcomes.

Materials and methods

All patients who were surgically treated due to adenocarcinoma of the colon at our hospital from November 2008 to April 2012 were reviewed. Patients with tumor fistulation to the other gastrointestinal organs diagnosed either by pre-operatively or intra-operatively were included to the study group for further evaluation. Preoperative diagnosis of the fistulation was achieved by showing the fistulous tract during pre-operative imaging tests. Intra-operative diagnosis of the fistulation was achieved by direct exposure of the fistulous tract after the detailed exploration. Demographic variables, clinical presentation, diagnostic evaluation, intra-operative findings, type of surgical procedure and pathologic examination were collected during a detailed chart review. Follow-up was accomplished through recent clinic visits as of April 2012. The outcome measures included completeness of the resection, recurrence of the tumor and the fistula, and overall survival.

Results

Among 102 patients who were surgically treated due to adenocarcinoma of the colon, there were four (3.92%) fistulas caused by colon cancer. All patients were male with a mean age 56.5 years (range from 46 to 63 years). The main presenting symptoms were diarrhea, rectal bleeding and loss of weight more than 10 % of the ideal weight in 2, 1 and 1 patient, respectively. Imaging tests and initial disease status were given in Table. Presence of the fistulas was not diagnosed preoperatively in all patients with the help of the imaging tests.

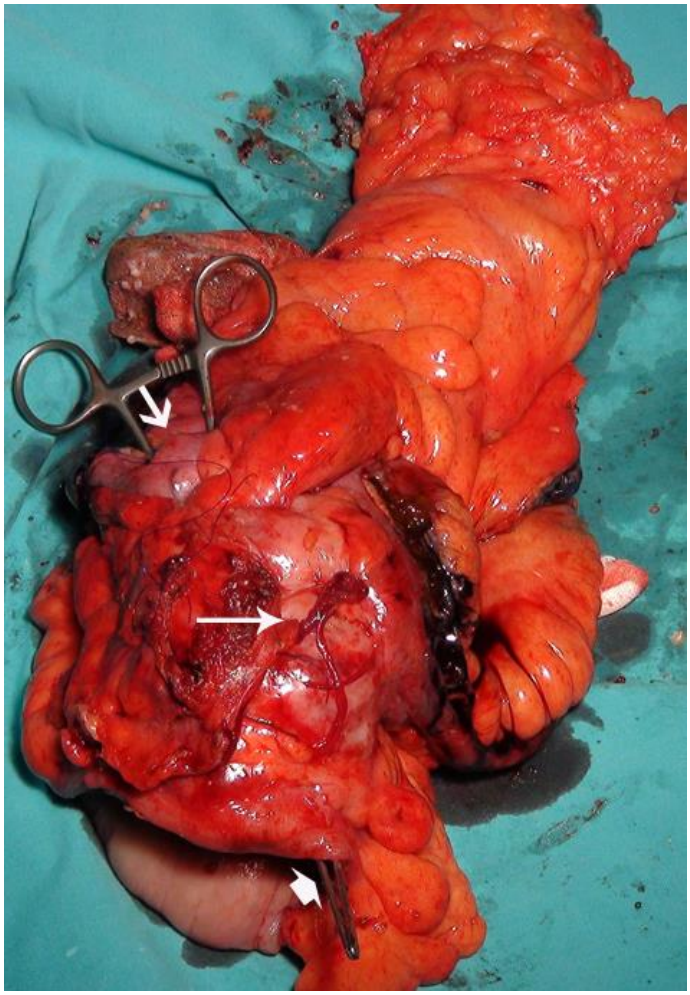
The fistulas detected intra-operatively (Figure) were detailed in Table. Complete resection of the tumor with the fistulous tract was achieved in all. Pathologic examination revealed adenocarcinoma of the colon originating from the transverse, the sigmoid and the cecum in 2, 1 and 1 patient, respectively.

Symptoms of the patients were all relieved after the surgical treatment. The mean duration of the follow-up period was 12.25 months with a range of 6 to 20 months in which there were one metastasis to the liver and one entero-cutaneous fistula. There was no mortality.

Table: Imaging techniques, intraoperative and postoperative findings of the patients.

No	Imaging / Initial disease status	Intraperative diagnosis / Surgery	Pathology / Postoperative treatment and outcome
1	Colonoscopy, CT / An obstructive lesion at the transverse colon	Colon cancer with coloduodenal fistula / Right hemicolectomy, wedge resection of the 2nd part of the duodenum and head of the pancreas	Adenocarcinoma, pT4bN1aM0 / Liver metastasis, chemotherapy, alive at the 20th month
2	Colonoscopy, upper endoscopy, CT / An obstructive lesion at the distal part of the transverse colon	Colon cancer with cologastric fistula / Transverse colectomy, subtotal gastrectomy	Adenocarcinoma, pT4bN0M0 / Chemotherapy, alive at the 6th month
3	Colonoscopy, CT / A cecal mass	Colon cancer with cecosigmoid fistula / Right hemicolectomy, sigmoid resection	Adenocarcinoma, pT4bN2aM0 / Enterocutaneous fistula, alive at the 9th month
4	Colonoscopy, CT / A mass at the sigmoid colon (18 cm from the anal verge)	Colon cancer with sigmoidorectal fistula / Extended low anterior resection, loop ileostomy	Adenocarcinoma, pT4bN0M0 / Chemoradiotherapy, ileostomy closure at 13rd month, alive at 14th month

Figure: A tumoral mass causing cecosigmoidal fistula located at the cecum (thin, white arrow). After opening of the walls of the cecum (thick, white arrow) and the sigmoid, a surgical instrument located through the fistulous tract (white arrowhead).



Discussion

It is generally accepted that it is a rare event for carcinoma of the colon to form fistulous connections with other gastrointestinal organs by direct invasion. Such connections are usually occurred secondary to primary colon cancers [1, 3, 6]. Incidence of colon cancers forming fistulas to the duodenum has been reported to be as low as 1 in 900, and mostly as case reports or case series [3]. Colo-gastric fistulas secondary to colon cancer has been reported even rarer [2, 5]. It has been shown that colo-colonic fistulas are usually a complication of inflammatory or neoplastic process. Sigmoido-cecal fistula, most probably as a complication of sigmoid diverticulitis, has been reported in a few case reports [7]. There was only one paper showing ceco-sigmoidal fistula caused by adenocarcinoma of the cecum [8]. It is generally thought that colo-colonic fistulas can be considered as rare pathologies without any clinical importance; therefore, publications with regard to this pathology are very small.

Clinical presentation varies according to status of the primary tumor, fistula itself or metastatic disease [3]. Although diarrhea, vomiting and weight loss are the most common symptoms caused by adenocarcinoma of the colon forming fistulas with upper gastrointestinal system, non-specific symptoms may sometimes cause difficulty for establishing the exact diagnosis [1-3]. Nutritional deficiency, fecal halitosis and abdominal pain were reported to be other symptoms with regard to malignant fistulation to upper gastrointestinal system [2]. Gastrointestinal bleeding has been reported as the main presenting symptom for malignant colo-duodenal fistula patients [6]. It is believed that diarrhea has been related to colonic bacterial contamination of the upper intestines rather than to a pure mechanical effect [3]. It has also been suggested that duodenal bile salts have an irritating effects on colonic mucosa resulting in diarrhea. However, colo-colonic fistulas usually have insidious presentation with nonspecific symptoms [7]. Diarrhea and rectal bleeding were the most common symptoms seen in our patients. Although such symptoms can be seen in each case of the patients with colon cancer, combination of diarrhea, nausea-vomiting with significant loss of weight should be regarded as a specific clue for formation of such fistulas [3].

Preoperative diagnosis of malignant fistulas may be difficult in some cases. Radiology with barium enema or meal is especially useful for delineating colorectal fistulas with upper gastrointestinal system. Therefore, they should be used in suspicious cases [1-3, 5, 7, 9]. Computed tomography is shown to be effective for documentation of the metastatic disease. Direct observation of the fistulous tracts by upper and lower gastrointestinal endoscopy has been accepted to be more diagnostic tool [1, 3]. It was found that a combination of radiologic imaging and endoscopy were complimentary in evaluation of the cases with malignant fistula [6, 9, 10]. However, it was impossible to diagnose these fistulas preoperatively only by using endoscopic techniques, most probably due to the lack of technical expertise. It is also thought that being reluctant to use of barium enema or meal in these cases is another point causing not to put a diagnosis preoperatively. Therefore, we offer to use a combination of radiologic imaging with barium and endoscopy in the suspicious cases.

In these patients, it was possible to diagnose these fistulas intraoperatively after the detailed exploration. Although preoperative diagnosis by imaging and endoscopic techniques can be accepted as a superior approach, showing the fistulous tract between two visceral organs can also be accepted as a diagnostic method during the surgery. However, it should be kept in mind that there may be some technical problems in cases with internal fistulas. For colonic cancers fistulised to upper gastrointestinal organs such as the stomach and the duodenum, retroperitoneal dissection of all tumoral tissues can be difficult to achieve complete resection. Care should be given to preserve the pancreatic tissues to avoid postoperative pancreatic fistulas. In colonic cancers fistulised to other part of the gastrointestinal tract, understanding of the anatomy is an important issue to perform anastomosis with regard to its number and safety.

Although surgical treatment depends on the extent of the primary tumor, the presence of the metastatic disease and the general condition of the patient, en-bloc resection of the fistulous tract with the primary tumor and fistula forming organs is the generally accepted modality [1-6]. The type of surgery may show some differences according to the localization of the tumor and the fistulous tract. A right hemicolectomy ad duodenal resection was accepted as the most appropriate surgery for colo-duodenal fistulas caused by adenocarcinoma of the colon [6].

It was also shown that prognosis and survival were usually dependent on the stage of the disease and presence of the curative resection [1, 3]. Complete resection with the primary tumor, the fistulous tract and the fistula forming organ was performed in all cases which might be responsible for the lack of mortality during the follow-up period. Therefore, it should be attempted to reach oncologic en-bloc resection with negative microscopic margins for long-term survival [6].

In conclusion, malignant fistula formation caused by colon cancers is a rare event. Although preoperative diagnosis can be achieved by using barium enema or meal and endoscopy in most of the cases, surgical treatment via oncologic en-bloc resection with negative microscopic margins is important for long-term survival.

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Association of granulomatous appendicitis and simple laboratory tests. Controlled observational study.

Granülomatöz apandisitin basit laboratuar testleriyle ilişkisi. Kontrollü gözlemsel çalışma.

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Abstract

Aim: Granulomatous appendicitis (GA) is evaluated as different clinical situation from specific causes, and very rare. It is defined as the presence of granulomatous inflammation in the appendix. Its etiology can be infectious, or noninfectious. However its differentiation from tumor can be challenging with macroscopic appearance in the operation. In this study, we aimed to present a case series of GA cases, evaluate prediction and association of GA before surgery.

Material and Methods: A descriptive study is designed. All appendectomies between 2007 and 2015 were reviewed. The patients who diagnosed with GA by histopathological evaluation constituted study group. The rest constituted the control group. Demographic data, complete blood count parameters (22 parameters for each) were recorded. Categorical variables were expressed as frequencies and percentages. Baseline characteristics were compared using the t-test and Mann-Whitney U test. Fisher's exact test was used to compare categorical variables. The differences were considered statistically significant if the p value was less than 0.05 at a 95% confidence interval.

Results: During study period, 4570 patients were operated for acute abdomen with the presumptive diagnosis of acute appendicitis. Eight (0.2%) patients constituted study group. For control group sample size was calculated as 527 cases (95% power to show a 50% difference in the rate of the primary outcome, with a 2-sided type I error rate of 5%. Additional 142 to decrease errors). Demographic findings like age and gender didn't show difference between the groups (p=0.499 and p=0.477, respectively). EOS# and EOS% were higher in study group than control group (p<0.0001 and p<0.0001, respectively). Logistic regression analysis showed that EOS% effect was significant with p of <0.0001, odds ratio of 0.522 and Nagelkerke R2 of 0.191.

Conclusion: Diagnosis of GA with macroscopic appearance in operation is a challenging for a surgeon. We found that EOS# and EOS% are associated with GA.

Keywords: Acute appendicitis, Granulomatous appendicitis, Prediction

Öz

Amaç: Granülomatöz apandisit (GA), spesifik nedenler ile oluşan farklı klinik durum olarak değerlendirilir ve çok nadirdir. Apendikste granülomatöz inflamasyon varlığı olarak tanımlanmaktadır. Etiyolojisi infeksiyöz veya infeksiyon dışı olabilir. Bununla birlikte, operasyondaki makroskopik görünümüyle tümörden ayırmak zor olabilir. Bu çalışmada, GA vaka serisi sunmayı ve cerrahiden önce GA öngörüsünü ve ilişkisini değerlendirmeyi amaçladık.

Araç ve Yöntemler: Tanımlayıcı bir çalışma tasarlandı. 2007 ile 2015 yılları arasındaki tüm apendektomiler gözden geçirildi. Histopatolojik değerlendirme ile GA tanısı alan hastalar çalışma grubunu oluşturdu. Geriye kalanlar kontrol grubu oluşturdu. Demografik veriler, tam kan sayımı parametreleri (her biri için 22 parametre) kaydedildi. Kategorik değişkenler frekanslar ve yüzdeler şeklinde ifade edildi. Temel özellikler, t-testi ve Mann-Whitney U testi kullanılarak karşılaştırıldı. Kategorik değişkenleri karşılaştırmak için Fisher'in kesin testi kullanıldı. P değerinin %95 güven aralığında 0.05'den düşük olması halinde farklar istatistiksel olarak anlamlı kabul edildi.

Bulgular: Çalışma süresi boyunca 4570 hasta akut karın için akut apandisit teşhisi ile ameliyat edildi. Çalışma grubunu sekiz hasta (%0,2) oluşturdu. Kontrol grubu için örneklem büyüklüğü %50 farkı göstermek için, %95 güce sahip olacak şekilde, 2 taraflı %5 tip I hata oranı ile 385 olarak hesaplandı Hata payını azaltmak için yapılan eklemeler (142) ile son sayı 527 olarak hesaplandı. Yaş ve cinsiyet gibi demografik bulgular gruplar arasında fark göstermedi (sırasıyla p=0,499 ve p=0,477). Çalışma grubunda EOS# ve EOS% kontrol grubuna göre daha yüksekti (sırasıyla p<0,0001 ve p<0,0001). Lojistik regresyon analizi EOS% etkisinin anlamlı olduğunu gösterdi (p<0,0001, odd's oranı: 0,522, Nagelkerke R2:0,191).

Sonuçlar: Operasyonda makroskopik görünümü ile GA'nın teşhisi cerrah için zorlayıcıdır. EOS # ve EOS%'nin GA ile ilişkili olduğunu tespit ettik.

Anahtar kelimeler: Akut apandisit, Granülomatoz apandisit, Ön görmek

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Introduction

Granulomatous appendicitis (GA) is an uncommon cause of acute abdomen and may be presented as appendicular mass. It is defined as the presence of granulomatous inflammation in the appendix. Its etiology can be infectious, i.e., Mycobacterium tuberculosis, Yersinia pseudotuberculosis, parasites, and fungal infection, or noninfectious, i.e., Crohn's disease, sarcoidosis or in the case of tumors, or idiopathic [1, 2].

GAs are usually presented as acute appendicitis, and usually detected as an incidental finding during operation and pathological evaluation of appendix. Sometimes it can't be predicted with simple laboratory and diagnostic imaging like ultrasound; however its consequence after surgery may differ from acute appendicitis [3, 4]. The confirmatory diagnosis is made by histopathology and is characterized by the presence of non-necrotizing epithelioid granuloma, and mucosal ulcerations [5, 6].

GA can be presented as appendicular mass in diagnostic evaluation or operation. But differentiation of GA from tumor can be challenging with macroscopic appearance in the operation. In this study, we aimed to present a case series of GA cases, evaluate prediction of GA before surgery and discuss the entity under review of literature.

Material and Methods

We designed a descriptive study using retrospective review of prospectively collected data. The local institutional review board approved the study, and the universal principles of the Helsinki Declaration were applied.

All appendectomies between 2007 and 2015 were reviewed. The patients who diagnosed with GA by histopathological evaluation constituted GA group (study group). The patients who diagnosed with acute appendicitis by histopathological evaluation constituted control group. Patients with diagnose of non-appendicitis, e.g., mucocele, or tumor were excluded.

Demographic data, e.g., age and gender, and complete blood count parameters (BASO#: Basophil count, BASO%: Basophil percent, EOS#: Eosinophil count, EOS%: Eosinophil percent, Hct: Hemotocrit, Hgb: Hemoglobin, LY#: Lymphocyte count, LY%: Lymphocyte percent, MCH: Mean corpuscular hemoglobin, MCHC: Mean corpuscular hemoglobin concentration, MCV: Mean corpuscular volume, MO#: Monocyte count, MO%: Monocyte percent, MPV: Mean platelet volume, NEU#: Neutrophil count, NEU%: Neutrophil percent, Pct: Platelet concentration, PDW: Platelet distribution width, Plt: Platelet, RBC: Red blood cell count, RDW: Red blood cell distribution width, WBC: White blood cell count) which are taken before operation were recorded. We then performed univariate and multivariate analyses using binary logistic regression to examine the associations.

In study group, preoperative presumptive diagnoses were evaluated, operation notes regarding suspicious intraoperative findings, radiological and histopathological evaluations were recorded. All study cases were followed-up by routine examination and telephone interview.

Statistics

Statistical analysis was performed using the Statistical Package for Social Sciences (SPSS) version 22.0 (IBM SPSS, New York, USA) & PASS (Power Analysis and Sample Size) 2008 Statistical Software (Utah, USA). Normal distributions of the variables were assessed via Kolmogorov-Smirnov test and histograms. Normally-distributed continuous variables were expressed as mean ± standard deviation (SD), and median and interquartile range is used for non-normally-distributed continuous variables. Categorical variables were expressed as frequencies and percentages. Baseline characteristics of the study and control groups were compared using the t-test for normally distributed continuous variables and Mann-Whitney U test for continuous variables without normal distribution and ordinal variables. Fisher's exact test was used to compare categorical variables. The statistical results were presented at a 95% confidence interval. The differences were considered statistically significant if the p value was less than 0.05.

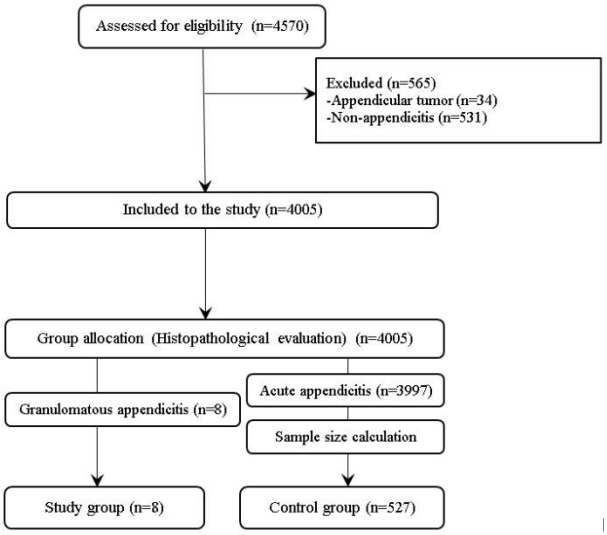
Results

During study period, 4570 patients were operated for acute abdomen with the presumptive diagnosis of acute appendicitis. In eight (0.2%) patients, histopathologic evaluation demonstrated a transmural inflammatory infiltrate in appendix with lymphoid follicles, indicative of granulomatous inflammation of appendix. These patients constituted the study group. After exclusion of 565 patients, 3997 patients constituted control group. We estimated that with a sample size of 385 control group patients, the study would have 95% power to show a 50% difference in the rate of the primary outcome, with a 2-sided type I error rate of 5%.

Also 142 patients added to decrease errors, and at the end, 527 patients constituted the control group. Selection of control group sample from 3997 patients were performed by computer generated numbers as a randomization model.

The diagram of the study is shown in figure 1.

Figure 1: Flowchart diagram



Patients' characteristics are provided in table 1. Demographic findings like age and gender didn't show difference between the groups (p=0.499 and p=0.477, respectively). Evaluation of complete blood count parameters revealed that EOS# and EOS% were higher in study group than control group (p<0.0001 and p<0.0001, respectively). Binary logistic regression analysis showed that EOS% effect was significant with p of <0.0001, odds ratio of 0.522 and Nagelkerke R2 of 0.191 (table 2).

In study group, the mean age was 31.1±10.7 years (20-46). Female to male ratio was 1 (4/4). Abdominal pain was present in all eight patients and nausea in three. Indications for surgery were acute abdomen in eight (100%) patients with presumptive diagnosis of acute appendicitis.

Table 1: Characteristics of groups

	Study group (n=8)	Control group (n=527)	p [1,2]
Age (Mean±SD)	31.1±10.7	28.5±10.6	0.499
Gender (M/F)	4/4	335/192	0.473
Complete blood count parameter	Median (IQR)	Median (IQR)	p [3]
BASO#	0.02 (0.05)	0.04 (0.06)	0.640
BASO%	0.20 (0.49)	0.24 (0.41)	0.690
EOS#	0.30 (0.17)	0.04 (0.11)	<0.001*
EOS%	2.93 (1.56)	0.27 (0.86)	<0.001*
Hct	35.7 (11.4)	39.5 (6.2)	0.211
Hgb	12.25 (4.2)	13.3 (2.2)	0.387
LY#	1.29 (1.99)	1.88 (1.27)	0.149
LY%	14.4 (13.6)	12.2 (11.55)	0.888
MCH	27.6 (2.6)	28.8 (2.5)	0.232
MCHC	33.5 (1.9)	33.7 (0.9)	0.777
MCV	81.15 (3.7)	85.7 (6.3)	0.064
MO#	0.76 (0.61)	0.86 (0.50)	0.103
MO%	5.9 (2.2)	6.0 (3.0)	0.663
MPV	6.8 (1.2)	7.3 (1.3)	0.100
NEU#	9.07 (8.01)	12.10 (6.2)	0.088
NEU%	74.8 (15.4)	80.7 (13.5)	0.471
Pct	0.21 (0.15)	0.18 (0.06)	0.571
PDW	18.15 (33.3)	17.6 (1.4)	0.127
Plt	291.5 (219)	249.0 (84)	0.425
RBC	4.35 (1.0)	4.68 (0.62)	0.304
RDW	15.3 (4.7)	15.5 (1.4)	0.862
WBC	13.25 (9.4)	14.6 (6.3)	0.121

SD: Standard deviation, M: Male, F: Female, IQR: Interquertile range, [1] t-test, [2] Fisher's exact test, [3] Mann Whitney U test, * p<0.05

Table 2: Binary logistic regression

	S.E.	p	OR	95% CI for OR Lower	Upper	Nagelkerke R2
EOS%	0.181	<0.0001	0.522	0.366	0.743	0.191
Constant	0.520	<0.0001	160.420			

Table 3: Characteristics of study group (Granulomatous appendicitis patients)

No	Sex	Age	Size cm	Pre-op diagnose	US	CT	Operative findings Operation
1	F	20	1,5	AA	AA	AA, AM	Normal Open appendectomy
2	F	22	2	AM	AA	AM	AM Right hemicolectomy
3	M	23	1.5	AM	AA, free fluid	AM, perforation, free air	AM, Perforated appendicitis Ileocecal resection
4	M	24	1	AA	AA	AA	AA Open Appendectomy
5	M	29	1	AA	AA		AA Laparoscopic appendectomy
6	M	42	0.5	AA	AA		AA Open Appendectomy
7	F	43	1	AM	AA	AM	AA Open Appendectomy
8	F	46	2	AA	AA		AM Right hemicolectomy

US: Ultrasound findings, CT: Computed tomography findings, F: Female, M: Male, AA: Acute appendicitis, AM: Appendicular mass

Detailed information about the cases of study group is summarized in table 3. Preoperative imaging were performed in all patients with ultrasound which is showed suspicion of acute appendicitis in all, and in five patients with computed tomography which is suspected of appendicular mass in four patients (figure 2), acute appendicitis in one. In operation, we detected appendicular mass in three of eight patients, and right hemicolectomy was performed in two (figure 3), ileocecal resection in one with the suspicion of tumor due to macroscopic appearance. Only appendectomy is performed in remaining five patients. In histopathological evaluation, Crohn's disease was suspected in three patients. In follow-up, entero-cutaneous fistula was detected in two patients, Crohn's disease in four. The patients with fistula were treated with conservative approach.

Figure 2: Computed tomography a, b, c: Multiplanar images of one patient showing the appendicular mass (axial, coronal, sagital), d, e: axial images.

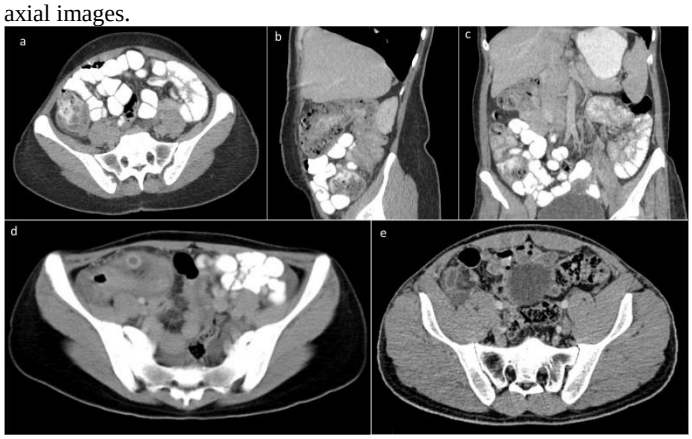
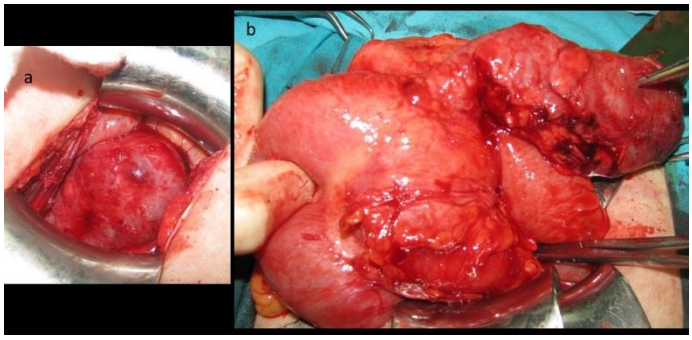


Figure 3: Operative view a: First appearance in surgery, b: Appendicular mass



Discussion

GA is a rare clinical entity and it is reported that GA constitutes less than 2% of all appendectomies in literature [7]. We found that 0.2% of appendectomy cases were GA, and they were all found incidentally. Our analysis for prediction effort was showed that EOS# and EOS% was significantly higher in GA patients.

The presentation of the condition does not differ from acute appendicitis, however they are usually more silent [1, 2]. Laboratory studies may provide little data and especially specific serology helps to diagnose at the onset of symptoms as it turns negative shortly after appendectomy [1]. In our study we found that complete blood count parameters, e.g., EOS#, EOS%, were different in GA patients.

Physical examination can be similar with an acute appendicitis. Imaging modalities like ultrasound cannot show a specific feature. Findings in ultrasound can be similar to that of a normal acute appendicitis. Therefore the patients are usually appendectomized due to presumptive diagnose of an acute

appendicitis, and the definitive diagnose of granulomatous appendicitis is achieved by histopathological examination [8, 9]. Treatment of GA is usually simple appendectomy, however some challenges may be shown in inflammatory bowel diseases, i.e. fistula in Crohn's disease [10]. In our study we performed ultrasound examination in all patients, however all examinations suspected only acute appendicitis. Computed tomography were taken in five patients and suspected appendicular mass in four patients, however it didn't change applied surgical treatment. Two right hemicolectomy and one Ileocecal resection were performed in three of eight patients. Only appendectomy was performed in remaining patients. Unfortunately enterocutaneous fistula was developed in two of these patients.

The etiology of GA can be infectious or non-infectious causes. Isolated granulomatous inflammation of the appendix is rare situation, and its etiology is still unknown [7]. Non-infectious causes are responsible for 62% of cases, and diverticulitis, Crohn's disease, foreign-body reactions, tumors and sarcoidosis are main etiologies. Although Crohn's disease cannot be demonstrated with histopathological examination of GA in some patients, it is shown that approximately 5 and 10% of patients with GA will develop Crohn's disease in their lifetimes [3,4,11]. In our study, we detected Crohn's disease in four patients (50% of GA patients).

Infectious causes are responsible for 38% of cases, and constitute Yersinia, Mycobacterium tuberculosis and other microorganisms, e.g., parasites and fungi [12-14]. Yersinia infection accounts for up to 25% of GA [13]. Yersinia enterocolitica and Yersinia pseudotuberculosis species are most responsible ones. In our study, Enterobias vermicularis infestation was found in one patient's appendix specimen at pathological evaluation. Tuberculosis was detected in one patient at follow-up, and treated accordingly. Idiopathic GA was suspected in remaining patients.

Some limitations are available in this study including its retrospective design and lack of advanced imaging technique like CT in some of the patients. New clinical studies with larger series are needed to confirm the aforementioned data of this study and to develop a protocol for detection of this pathology.

In conclusion, definitive diagnosis of GA could not be achieved in some cases with preoperative advanced imaging studies or macroscopic appearance in surgery. Preoperative laboratory studies, e.g., EOS# and EOS%, were found associated with GA. Treatment modality of this entity may be challenging for the surgeon, simple appendectomy or right hemicolectomy can be used accordingly in the operation.

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DOI: 10.25000/acem.289793 Case Report / Olgu Sunumu

Strangulated paraesophageal hernia: A case report

Boğulmuş paraözefageal herni: Olgu sunumu

Fatih Basak [1], Sefika Aksoy [2], Mert Mahsuni Sevinc [2], Ali Tardu [2], Acar Aren [2]

Abstract

Hiatal hernia has a risk for volvulus and strangulation. Paraesophageal hernia (type II hiatal hernia) is seen as the most risky group because of having a focal defect. In this study, we aimed to present a case with strangulated paraesophageal hernia which was surgically treated in an emergent basis.

Keywords: Hiatal hernia, Paraesophageal hernia, Strangulation

Öz

Hiatal hernilerin volvulus ve boğulma riski vardır. Paraözofageal herni (tip II hiatal herni), fokal defekt nedeniyle en riskli grup olarak görülmektedir. Bu çalışmada, acil cerrahi tedavi gerektiren bir strangüle paraözefageal herni olgusunu sunmayı amaçladık.

Anahtar kelimeler: Hiatal herni, Paraözafageal herni, Boğulma

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Introduction

Paraesophageal hernia (PH), e.g., type II hiatal hernia, occurs due to focal weakness of pharyngoesophageal membrane and diaphragmatic crus. In this case, while the gastroesophageal junction and the cardia maintain their normal position under the diaphragm, a portion of the gastric fundus and/or large curvature travels through the pleural cavity, forming a hernia. In the advanced cases, most of the fundus deviates to the right hemithorax, and the small curvature and the pylorus which are fixed to the retroperitoneum by the duodenum stay intra-abdominally [1, 2].

Although they are seen rarely, the most frightening complication of paraesophageal hernias is volvulus and strangulation. PH is seen as the most risky group because of having a focal defect [1, 3]. In this study, we aimed to present a case of strangulated PH surgically treated in an emergent basis.

Case report

A 56-year-old man admitted to the emergency department with a three-day history of abdominal pain and vomiting. His previous clinical record showed a cardiac surgery and no abdominal operation or trauma was present. On physical examination, he complained of moderate epigastric discomfort. Physical signs of acute abdomen was not detected. Chest and abdominal x-ray studies were performed, and revealed a big air-fluid level at the epigastric area (Figure 1 and Figure 2). The patient was diagnosed as strangulated paraesophageal hernia and he was informed for surgical necessity. After anesthesia preparation, he underwent open surgery.

Figure 1: Chest x-ray

Figure 2: Abdominal x-ray

The fundus of the stomach was detected as herniated into the mediastinum over the hernia defect. It was reduced and seen viable, therefore no further procedure performed. The crural defect was repaired, and Nissen fundoplication was added. He discharged postoperative 8th day without any complication.

Discussion

Paraesophageal hernia (PH) is a rare type of hiatal hernia. Four types of hiatal hernia are identified. The more common sliding hernia, type I, is characterized by an upward dislocation of the cardia in the posterior mediastinum. The PH, type II, is characterized by an upward dislocation of the gastric fundus alongside a normally positioned cardia. The mixed hernia, type III, is characterized by an upward dislocation of the cardia and the gastric fundus [1, 2]. The fourth one is defined as herniation of organs beside the stomach, i.e., omentum or colon.

Pain in the epigastric area is the most common symptom in patients with PH. Others include dysphagia, nausea, vomiting, hematemesis and dyspnea [2].

Common complications of PH include hemorrhage, ulceration, incarceration, obstruction, and strangulation [3]. A case of perforation of the ulcer in the hernia sac is reported [4]. These complications can be lethal [5].

The presence of stomach in the mediastinum shown by air-fluid levels on chest x-ray is diagnostic for PH. A barium swallow provides the diagnosis in virtually every case. Fiberoptic esophagoscopy is useful in the diagnosis and classification of a hiatal hernia [6].

All symptomatic patients with PH should be considered for surgical repair [7]. Untreated patients have a very high mortality rate because of complications. If surgery is delayed and repair is done on an emergency basis, operative mortality is higher than elective repair. Surgical repair of PH may be either transabdominal or transthoracic. Laparoscopic repair has proven to be effective in the treatment [8-11].

In conclusion, strangulated paraesophageal hernia may be seen in elder adults. Chronic herniation can be undetected for a long time. Emergent surgical treatment of incarcerated hiatal hernia should be performed due to risk of strangulation of the herniated organs.

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Rekürren biliyer pankreatit nasıl önlenebilir? Olgu sunumu ve literatür derlemesi

How the recurrence of biliary pancreatitis can be prevented? A case report and literature review

Fatih Başak [1], Ali Tardu [2], Mert Mahsuni Sevinç [2], Erdem Kınacı [2], Acar Aren [2]

Öz

Rekürren akut pankreatit, klinik uygulamada hala kompleks bir tanı ve tedavi olarak karşımıza çıkmaktadır. Pankreatitte tekrarlayan ataklar çoğunlukla teşhis sırasında normal bir morfoloji gösteren bir bezde görülür, bu yüzden böylesi bir klinik varlığın normal pankreasta tekrarlanan pankreatit ataklarıyla karakterize olduğuna inanılır. Rekürren akut pankreatitli hastaların değerlendirilmesi, düzeltilebilir faktörlerinin sistematik tanımlanması veya ortadan kaldırılmasını gerektirir. Bu çalışmada, altı kez atak ile başvuran akut pankreatit olgusunu literatür eşliğinde sunmayı amaçladık.

Anahtar Kelimeler: Pankreatit, Rekürrens, Kolesistektomi, Endoskopik sfinkterotomi

Abstract

Diagnosis and treatment of recurrent acute pancreatitis remains a complex issue in clinical practice. Repeated episodes of pancreatitis are usually seen in a gland with a normal morphology during diagnosis, so it is believed that such a clinical entity is characterized by recurrent episodes of pancreatitis in the normal pancreas. The evaluation of patients with recurrent acute pancreatitis requires systematic identification or removal of correctable factors. In this study, we aimed to present a case of acute pancreatitis with six attacks in the light of the literature.

Keywords: Pancreatitis, Recurrence, Cholecystectomy, Endoscopic sphincterotomy

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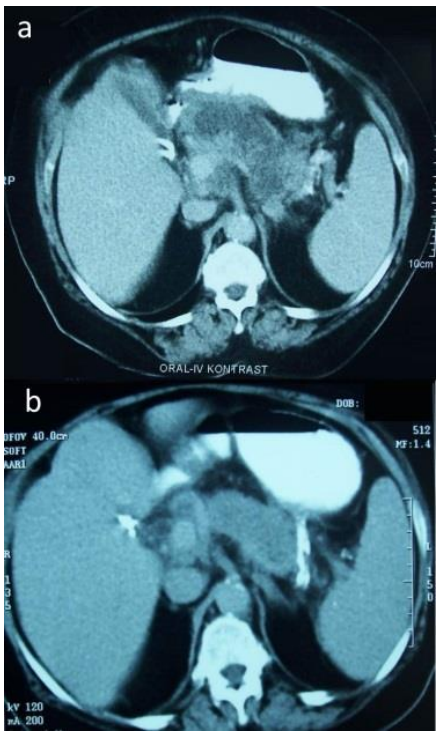
Giriş

Akut pankreatit (AP), pankreas bezinin akut bir inflamasyonudur ve çeşitli etyolojilerin sebep olduğu bir durum olup, safra taşları atakların %50-70'inden sorumludur. Başlangıçta akut pankreatit ataklarına neden olabilecek herhangi bir faktör, tekrarlayan ataklar başlatma potansiyeline sahiptir [1]. AP'den dolayı başvuruların %27'sini tekrarlayan ataklar oluşturur ve kolelitiazis bunların dörtte birinden sorumludur [2]. Bu çalışmada altı kez tekrarlayan ataklarla tanı ve tedavisi gerçekleştirilen bir AP olgusunu literatür eşliğinde sunmayı amaçladık.

Olgu sunumu

Altmış dokuz yaşında kadın hasta karın ağrısı, bulantı ve kusma şikayetleriyle başvurdu. Özgeçmişinde diabet, hipertansiyon ve kalp yetmezliği mevcuttu. Fizik muayenede sağ üst kadran ve epigastrik bölgede hassasiyet mevcuttu, akut karın bulguları saptanmadı. Laboratuar değerlendirmeleri lökosit: 16.000 /mm³, glukoz: 165 mg/dl, LDH: 300 IU/L, AST: 200 IU/L, Amilaz >1300 IU/ml olup ilk başvuruda Ranson skoru 2 olarak hesaplandı. Ultrasonografide safra kesesi içinde multipl kalküller ve akut kolesistit ile uyumlu bulgular saptandı. Bilgisayarlı tomografide (BT) akut pankreatit ile uyumlu bulgular görüldü. Endoskopik retrograd kolangio pankreatografi (ERCP) işlemi ile sfinkterotomi yapıldı. Koledok içerisinde milimetrik safra taşları olduğu ve sfinkterotomi sonrası bunların duodenuma boşaldığı görüldü. Şikayetlerinin düzelmesi ile taburcu edildi (yatış süresi 7 gün). On gün sonra benzer şikayetler ile başvurdu. Hasta akut pankreatit olarak değerlendirilip, tekrar hastaneye yatışı yapıldı. Bilgisayarlı tomografide (BT) peripankreatik bölgede %50'yi aşan sıvı kolleksiyonları ve içerisinde heterojen solid bileşenler olduğu görüldü (Resim 1a). Şikayetlerinin düzelmesi ile taburcu edildi (yatış süresi 8 gün). Elli altı gün sonra benzer şikayetler ile başvurdu. Ranson skoru 2 olan akut pankreatit olarak değerlendirildi. BT'de sıvı kolleksiyonlarında ve içerisindeki heterojen solid bileşenlerde gerileme görüldü (Resim 1b).



Resim 1: Bilgisayarlı tomografi görüntüsü (a: 2.yatış, b: 4.yatış)

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Aynı yatışta laparoskopik kolesistektomi yapıldı. Düzelme sonrası taburcu edildi (yatış süresi 13 gün). On bir gün sonra tekrar başvurdu. Yeni bir AP atağı olarak değerlendirildi ve 4. yatış yapıldı. Destek tedavisi sonrası taburcu edildi (yatış süresi 13 gün). Bir gün sonra tekrar başvurdu ve 5. yatış yapıldı. Destek tedavisi sonrası taburcu edildi (yatış süresi 10 gün). Sekiz gün sonra tekrar başvurdu. Benzer laboratuvar ve klinik bulgularla 6. yatış yapıldı. Destek tedavisi sonrası taburcu edildi (yatış süresi 11 gün). Altı aylık takibinde herhangi bir sorun görülmedi. Hastanın yatış süreçleri tablo 1'de özetlenmiştir.

Tablo 1: Hastanın yatış süreçleri

Yatışlar	Ataksız-Yatışsız süre	Yatış süresi (gün)	Tetkik- İşlem
1		7	USG, BT, ERCP
2	10	8	BT
3	56	13	BT, Lap. Kol.
4	11	13	BT
5	1	10	
6	8	11	BT
Toplam		62 gün (/ 142 gün)	USG, 5 BT, ERCP, Lap. Kol.

USG: Ultrasonografi, BT: Bilgisayarlı tomografi, ERCP: Endoskopik retrograd kolangio pankreatografi, Lap. Kol.: Laparoskopik kolesistektomi

Tartışma

AP'nin patogenezinde genellikle iki mekanizma olduğu kabul edilir: safra yolunda safra reflüsü ve en önemlisi, göç edici taş veya ampulladaki impakte bir taştan kaynaklanan geçici ampulla tıkanıklığı [3]. AP olgularında safra kesesi bırakıldığında %75-90'a kadar nüksler bildirilmiştir, ve kolesistektominin bu hastalarda tekrarlama riskini %10 oranına azalttığı bilinmektedir [4]. Bu nedenle, AP hastalarında, hastanın ameliyat olmak için uygun olması durumunda kolesistektomi yapılması ve ortak safra kanalı taşlarının ERCP ile çıkarılması önerilmektedir [5, 6]. Yüksek cerrahi riski olan veya kolesistektomi istemeyen hastalarda, endoskopik sfinkterotomi (ES) kolesistektomiye alternatif olabilir [7, 8].

Cerrahiye uygun hastalarda kolesistektomi ve ortak safra kanalı taşlarının çıkarılması, hastalığın tekrarını önlemek için önerilmektedir. Cerrahinin zamanlaması tartışmalıdır. Bazı yazarlar acil ameliyatı (ilk 48 saat içinde) savunurken, diğerleri erken cerrahiyi desteklemektedir (ilk başvuruda tıbbi destek tedavisinden sonra) [9, 10]. Yine de, gecikmiş cerrahi (AP atağının iyileşmesinden sonra ikinci bir AP başvurusunda) değerlendirildiğinde, yüksek nüks oranı saptanmıştır (% 49-61) [11]. AP'nin klinik kılavuzlarında gösterildiği gibi şu anda, cerrahinin zamanlaması konusunda büyük bir uzlaşma vardır [7, 8]. Hafif AP'de kolesistektomi, ilk başvuru sırasında veya en azından ilk 4 hafta içinde yapılmalıdır. Kolesistektomi için zamanlama şiddetli formlarda o kadar net değildir. Tekrar atak gelişiminin önlenmesinde ERCP'nin rolü üzerine yapılan çalışmalar, ES'nin yüksek cerrahi riski olan veya kolesistektomi geçirmek istemeyen hastalarda kolesistektomiye bir alternatif olabileceğini göstermektedir [8]. Bizim olgumuzda ilk başvuruda ES yapıldı, ancak yineleme olunca kolesistektomi yapıldı. Bu varsayımları kanıtlamak zor olmakla birlikte: ilk iki atak birbirini devamı olabilir, ya da ikinci atak ERCP işlemine sekonder gelişmiş olabilir.

Villoria ve ark. [12], nükslerin %50'sinin ilk iki ay içinde meydana geldiğini bildirdi. Frei ve ark. [13] rekürrenslerin %52.1'ini, AP atağından sonraki ilk 6 hafta içinde gözledi. İlgili çalışmada, tekrarlayan atakların %90'ı safra kesesi mevcut olan hastalarda görüldü. Nükslerin %4'ü koledokolitiazise bağlıydı ve atakların %6'sı idiyopatik olarak kabul edildi. İlk atak şiddetli olursa, tekrarlayan atakların daha sık ağır olduğuna dikkat çekilmektedir [14]. Bizim olgumuzda ikinci atak şiddetli AP olarak tespit edildi. İlk iki atak sırasında ES ve kolesistektomi işlemleri uygulandı ancak dört kez daha AP yinelemesi tespit edildi. İkinci yinelemeden sonra gelişen yinelemeler için, "atak değil psödokist oluşumu" gibi hipotezler düşünülebilir. Ancak diğer ataklarda tetkikler esnasında görüntülemelerde psödokist saptanmamıştır. Bu tekrarlayan atak durumlarının, ikinci atakta gelişen şiddetli pankreatit tablosunun şiddetine bağlı olduğunu düşünmekteyiz. Bu durum, etkin bir şekilde tedavi edilememiş şiddetli bir akut pankreatit tablosunun da akılda tutulmasını gerekli kılmaktadır.

Sonuç olarak, kolesistektomi uygulanmazsa, AP rekürrensi sık görülen bir olaydır. Ancak kolesistektominin gecikmesi, nüks için bir risk faktörü olarak belirlenememiştir. Bu nedenle, mevcut klinik uygulamada kılavuzlara uymak için çaba gösterilmelidir. Cerrahiye uygun olmayan veya kolesistektomi yapılmasını reddeden hastalarda nüksün önlenmesi için ES kabul edilebilir bir tedavi seçeneği olabilir. Cerrahi riski olmayan (cerrahiyi uygun, ancak ameliyatı kabul etmeyen hasta) hastalarda rekürrensi önlemek için ES'nin rolünü belirlemek için daha ileri çalışmalara ihtiyaç vardır.

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