

BÖLÜM 18

Enteroenterik Fistüller

Leyla Zeynep TİGREL¹

GİRİŞ

Epitel ile örtülü iki farklı yüzey arasında normal anatominin bozulmasıyla oluşan bağlantılar fistül olarak tanımlanmıştır. Farklı nedenlerle meydana gelebilen tüm fistül çeşitleri arasında iki ince bağırsak epiteli arasında oluşan enteroenterik fistüller oldukça nadir olarak görülmektedir (1).

PATOFİZYOLOJİ

Bağırsak İnflamasyonu

Bağırsak içinde inflamasyona neden olan etkenler arasında farklılıklar görülse de enteroenterik fistüllerin tamamı bağırsak inflamasyonu sonucunda oluşur. Bu fistüllerin oluşum mekanizmasının anlaşılması için bağırsağın inflamasyon sürecinin anlaşılması büyük önem arz eder.

Bağırsak mukozası, dış ortam ile vücut arasındaki en büyük geçiş yüzeyini oluşturur. Diğer mukozalarda da olduğu gibi, yüzeyi boyunca meydana gelen geçişleri düzenleyen bir bariyer olarak hayati rol oynar. Bununla birlikte, bariyer görevi görmek zorunda olduğu dış ortamın agresif doğası nedeniyle, bağırsak mukozasının bariyer işlevi, diğer mukozal yüzeylerinkinden bile daha

¹ Op. Dr., Medeniyet Üniversitesi Göztepe Şehir Hastanesi, Genel Cerrahi Kliniği,
leylazeyneptigrel@icloud.com

KAYNAKLAR

1. Khan MS, Khan I, Humza A, et al. Enteroenteric Fistulae in Acute Bowel Ischemia. *J Coll Physicians Surg Pak*. 2018;28(7):568-71. p. 568-71. doi: 10.29271/jcpsp.2018.07.568.
2. Gilroy DW, Lawrence T, Perretti M, et al. Inflammatory resolution: new opportunities for drug discovery. *Nat Rev Drug Discov*. 2004;3(5):401-16. p. 401-16. doi: 10.1038/nrd1383.
3. Ward C, Dransfield I, Chilvers ER, et al. Pharmacological manipulation of granulocyte apoptosis: potential therapeutic targets. *Trends Pharmacol Sci*. 1999;20(12):503-9. p. 503-9. doi: 10.1016/s0165-6147(99)01391-7.
4. Van Assche G, Geboes K, Rutgeerts P. Medical therapy for Crohn's disease strictures. *Inflamm Bowel Dis*. 2004;10(1):55-60. p. 55-60. doi: 10.1097/00054725-200401000-00009.
5. Monteleone G, Kumberova A, Croft NM, et al. Blocking Smad7 restores TGF-beta1 signaling in chronic inflammatory bowel disease. *J Clin Invest*. 2001;108(4):601-9. p. 601-9. doi: 10.1172/JCI12821.
6. Bataille F, Klebl F, Rummele P, et al. Morphological characterisation of Crohn's disease fistulae. *Gut*. 2004;53(9):1314-21. p. 1314-21. doi: 10.1136/gut.2003.038208.
7. Kalluri R, Neilson EG. Epithelial-mesenchymal transition and its implications for fibrosis. *J Clin Invest*. 2003;112(12):1776-84. p. 1776-84. doi: 10.1172/JCI20530.
8. Meier JK, Scharl M, Miller SN, et al. Specific differences in migratory function of myofibroblasts isolated from Crohn's disease fistulae and strictures. *Inflamm Bowel Dis*. 2011;17(1):202-12. p. 202-12. doi: 10.1002/ibd.21344.
9. Brunicki FC, Andersen DK, Billiar TR, et al. Editors. *Schwartz's Principles of Surgery*, 11e. New York, NY: McGraw-Hill Education; 2019.
10. Schwartz DA, Tagarro I, Carmen Diez M, et al. Prevalence of Fistulizing Crohn's Disease in the United States: Estimate From a Systematic Literature Review Attempt and Population-Based Database Analysis. *Inflamm Bowel Dis*. 2019;25(11):1773-9. p. 1773-9. doi: 10.1093/ibd/izz056.
11. Dwight P, Poenaru D. Entero-enteric fistula following mild necrotizing enterocolitis. *Eur J Pediatr Surg*. 2005;15(2):137-9. p. 137-9. doi: 10.1055/s-2004-821181.
12. Kwo PY, Tremaine WJ. Nonsteroidal anti-inflammatory drug-induced enteropathy: case discussion and review of the literature. *Mayo Clin Proc*. 1995;70(1):55-61. p. 55-61. doi: 10.1016/s0025-6196(11)64666-1.
13. García-Romera Á, Soto-Darias I, González-Hernández S, et al. Small bowel obstruction secondary to enteroenteric fistula: An uncommon complication in chronic NSAID users. *Cir Esp (Engl Ed)*. 2020;98(4):245-7. p. 245-7. doi: 10.1016/j.ciresp.2019.07.006.
14. Singh H, Mandavdhare H, Sharma V. All that fistulises is not Crohn's disease: Multiple entero-enteric fistulae in intestinal tuberculosis. *Pol Przegl Chir*. 2019;91(1):35-7. p. 35-7. doi: 10.5604/01.3001.0012.8269.
15. Janoff EN, Smith PD. Perspectives on gastrointestinal infections in AIDS. *Gastroenterol Clin North Am*. 1988;17(3):451-63. p. 451-63.
16. Smith PD, Quinn TC, Strober W, et al. NIH conference. Gastrointestinal infections in AIDS. *Ann Intern Med*. 1992;116(1):63-77. p. 63-77. doi: 10.7326/0003-4819-116-1-63.
17. Asif T, Hasan B, Likhitsup A, et al. Colovesical Fistula: An Unusual Complication of Cytomegalovirus Colitis. *Cureus*. 2017;9(7):e1426. p. e1426. doi: 10.7759/cureus.1426.
18. Simko V, Chandrasekaran P, Gillon S, et al. Enteroenteric fistula of the duodenum in a patient with AIDS and Mycobacterium avium-intracellulare infection. *J Assoc Acad Minor Phys*. 1993;4(4):138-42. p. 138-42.
19. Al-Shanafey S, AlRobean F, Bin Hussain I. Surgical management of gastrointestinal basidiobolomycosis in pediatric patients. *J Pediatr Surg*. 2012;47(5):949-51. p. 949-51. doi: 10.1016/j.jpedsurg.2012.01.053.

20. Al Haq AM, Rasheedi A, Al Farsi M, et al. Gastrointestinal Basidiobolomycosis in pediatric patients: A diagnostic dilemma and management challenge. *Int J Pediatr Adolesc Med.* 2021;8(4):212-20. p. 212-20. doi: 10.1016/j.ijpam.2020.05.003.
21. Kim YM, Lee TH, Jung SH, et al. Hepatic abscess that formed secondary to fish bone and had a fistula with the ascending colon. *Dig Dis Sci.* 2007;52(12):3515-8. p. 3515-8. doi: 10.1007/s10620-006-9198-x.
22. Butterworth J, Feltis B. Toy magnet ingestion in children: revising the algorithm. *J Pediatr Surg.* 2007;42(12):e3-5. p. e3-5. doi: 10.1016/j.jpedsurg.2007.09.001.
23. Hussain SZ, Bousvaros A, Gilger M, et al. Management of ingested magnets in children. *J Pediatr Gastroenterol Nutr.* 2012;55(3):239-42. p. 239-42. doi: 10.1097/MPG.0b013e-3182687be0.
24. Pederiva F, Daniela C, Scarpa MG, et al. An asymptomatic multiple magnet ingestion with transmesenteric entero-enteric fistula. *APSP J Case Rep.* 2014;5(2):16. p. 16.
25. Pogorelic Z, Boric M, Markic J, et al. A Case of 2-Year-Old Child with Entero-Enteric Fistula Following Ingestion of 25 Magnets. *Acta Medica (Hradec Kralove).* 2016;59(4):140-2. p. 140-2. doi: 10.14712/18059694.2017.42.
26. Elsafty N, Clancy C, Bajwa R, et al. Entero-enteric fistula from the stump of an end-to-side ileocolic anastomosis mimicking cancer recurrence. *J Surg Case Rep.* 2015;2015(9). doi: 10.1093/jscr/rjv109.
27. Patel R, Reid TH, Parker SG, et al. Intraluminal mesh migration causing enteroenteric and enterocutaneous fistula: a case and discussion of the 'mesh problem'. *BMJ Case Rep.* 2018;2018. doi: 10.1136/bcr-2017-223476.
28. Tanrikulu Y, Tanrikulu CS, Yilmaz G, et al. Idiopathic weight loss due to an entero-enteric fistula from a gossypiboma retained for 27 years. *Turk J Surg.* 2018;34(1):65-7. p. 65-7. doi: 10.5152/turkjsurg.2017.3181.
29. Diller R, Senninger N, Kautz G, et al. Stent migration necessitating surgical intervention. *Surg Endosc.* 2003;17(11):1803-7. p. 1803-7. doi: 10.1007/s00464-002-9163-5.
30. Patil S, Roomi S, Shiwani MH. Migrated Biliary Stent Causing Entero-enteric Fistula. *J Gastrointest Surg.* 2017;21(1):205-6. p. 205-6. doi: 10.1007/s11605-016-3213-0.
31. Waddell BE, Rodriguez-Bigas MA, Lee RJ, et al. Prevention of chronic radiation enteritis. *J Am Coll Surg.* 1999;189(6):611-24. p. 611-24. doi: 10.1016/s1072-7515(99)00199-4.
32. Zhu W, Gong J, Li Y, et al. A retrospective study of surgical treatment of chronic radiation enteritis. *J Surg Oncol.* 2012;105(7):632-6. p. 632-6. doi: 10.1002/jso.22099.
33. Zhuang N, Zhu Q, Li W, et al. Rare intestinal fistula caused by primary lymphoma of the gastrointestinal tract: Two case reports and literature review. *Medicine (Baltimore).* 2018;97(27):e11407. p. e11407. doi: 10.1097/md.00000000000011407.
34. Zhao RJ, Zhang CL, Zhang Y, et al. Enteral fistula as initial manifestation of primary intestinal lymphoma. *Chin Med J (Engl).* 2020;133(1):101-2. p. 101-2. doi: 10.1097/cm9.0000000000000598.
35. Levy C, Tremaine WJ. Management of internal fistulas in Crohn's disease. *Inflamm Bowel Dis.* 2002;8(2):106-11. p. 106-11. doi: 10.1097/00054725-200203000-00007.
36. Fielding EJW, Hallissey MT. Upper Gastrointestinal Surgery. 1 ed. *Springer, London*; 2005. doi: 10.1007/b138156.
37. Rieber A, Aschoff A, Nüssle K, et al. MRI in the diagnosis of small bowel disease: use of positive and negative oral contrast media in combination with enteroclysis. *European Radiology.* 2000;10(9):1377-82. p. 1377-82. doi: 10.1007/s003300000354.

38. Gasche C, Moser G, Turetschek K, et al. Transabdominal bowel sonography for the detection of intestinal complications in Crohn's disease. *Gut*. 1999;44(1):112-7. p. 112-7. doi: 10.1136/gut.44.1.112.
39. Pesce Lamas Constantino C, Souza Rodrigues R, Araujo Oliveira Neto J, et al. Computed tomography and magnetic resonance enterography findings in Crohn's disease: what does the clinician need to know from the radiologist? *Can Assoc Radiol J*. 2014;65(1):42-51. p. 42-51. doi: 10.1016/j.carj.2012.11.004.
40. Chiorean MV, Sandrasegaran K, Saxena R, et al. Correlation of CT enteroclysis with surgical pathology in Crohn's disease. *Am J Gastroenterol*. 2007;102(11):2541-50. p. 2541-50. doi: 10.1111/j.1572-0241.2007.01537.x.
41. Panés J, Bouzas R, Chaparro M, et al. Systematic review: the use of ultrasonography, computed tomography and magnetic resonance imaging for the diagnosis, assessment of activity and abdominal complications of Crohn's disease. *Aliment Pharmacol Ther*. 2011;34(2):125-45. p. 125-45. doi: 10.1111/j.1365-2036.2011.04710.x.
42. Fidler JL, Guimaraes L, Einstein DM. MR imaging of the small bowel. *Radiographics*. 2009;29(6):1811-25. p. 1811-25. doi: 10.1148/rg.296095507.
43. Fallis SA, Murphy P, Sinha R, et al. Magnetic resonance enterography in Crohn's disease: a comparison with the findings at surgery. *Colorectal Dis*. 2013;15(10):1273-80. p. 1273-80. doi: 10.1111/codi.12361.
44. Hellers G. Crohn's disease in Stockholm county 1955-1974. A study of epidemiology, results of surgical treatment and long-term prognosis. *Acta Chir Scand Suppl*. 1979;490:1-84. p. 1-84.
45. Cooke WT, Mallas E, Prior P, et al. Crohn's disease: course, treatment and long term prognosis. *Q J Med*. 1980;49(195):363-84. p. 363-84.
46. Fazio VW, Marchetti F, Church M, et al. Effect of resection margins on the recurrence of Crohn's disease in the small bowel. A randomized controlled trial. *Ann Surg*. 1996;224(4):563-71; discussion 71-3. p. 563-71; discussion 71-3. doi: 10.1097/00000658-199610000-00014.
47. Sachar DB. Indications for Surgery in Crohn's Disease. *Official journal of the American College of Gastroenterology | ACG*. 2007;102:76-8. p. 76-8.
48. Moreno Sánchez N, Paredes JM, Ripollés T, et al. Treatment of abdominal fistulas in Crohn's disease and monitoring with abdominal ultrasonography. *Rev Esp Enferm Dig*. 2021;113(4):240-5. p. 240-5. doi: 10.17235/reed.2020.6884/2020.
49. Li DF, Zhu SZ, Xu ZL, et al. Unusual case of a large small-bowel enteroenteric fistula successfully closed using purse-string sutures. *Endoscopy*. 2020;52(11):E422-e3. p. E422-e3. doi: 10.1055/a-1149-1328.
50. Pogorelić Z, Borić M, Markić J, et al. A Case of 2-Year-Old Child with Entero-Enteric Fistula Following Ingestion of 25 Magnets. *Acta Medica (Hradec Kralove)*. 2016;59(4):140-2. p. 140-2. doi: 10.14712/18059694.2017.42.
51. Shpata V, Prendushi X, Kreka M, et al. Malnutrition at the time of surgery affects negatively the clinical outcome of critically ill patients with gastrointestinal cancer. *Med Arch*. 2014;68(4):263-7. p. 263-7. doi: 10.5455/medarh.2014.68.263-267.
52. Leisman D, Wie B, Doerfler M, et al. Association of Fluid Resuscitation Initiation Within 30 Minutes of Severe Sepsis and Septic Shock Recognition With Reduced Mortality and Length of Stay. *Ann Emerg Med*. 2016;68(3):298-311. p. 298-311. doi: 10.1016/j.annemergmed.2016.02.044.