

# BÖLÜM 32

## Fistül Görüntülemeye Genel Yaklaşım, Fistülografi

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### GİRİŞ

Fistüller, epitelle kaplı iki yüzey arasındaki anormal iletişimlerdir. Gastrointestinal (GI) fistüller, sindirim sistemini içeren tüm bu tür bağlantıları kapsar. Doğuştan veya sonradan kazanılmış olabilirler. Edinilmiş bir GI fistülün gelişimi hastanın sonucunu büyük ölçüde etkileyebilir, ancak klinik belirtiler genellikle değişkendir. Etiyoloji anlaşılması güçtür. Görüntüleme, edinilmiş GI fistüllerin saptanması ve yönetiminde önemli bir rol oynar. Bilgisayarlı tomografi (BT) ve magnetik rezonans görüntüleme (MRG) gibi kesitsel görüntüleme yöntemlerinin rutinde daha sık kullanımı, olası fistüller için standart radyolojik değerlendirme sırasını değiştirmiştir. Ancak floroskopik çalışmalar, özellikle anormal bağlantıları doğrulamak ve tanımlamak için değerli bir tamamlayıcı olmaya devam etmektedir.

GI fistüller, barsak ile başka bir organ sistemi, cilt yüzeyi veya GI trakt boyunca başka bir epitel dōşeli yüzey arasındaki anormal, kanal benzeri bağlantıyı temsil eder. Bir GI sinüs traktı ise bir uçta barsakla bağlantılı diğer uçta kör olarak biten kanal benzeri pasajdır. GI fistülün gelişimi, hasta morbiditesini ve mortalitesini önemli ölçüde arttırabilir. Floroskopik kontrast ajan ile yapılan görüntüleme GI fistülün tanı ve tedavisinde sıklıkla çok önemli bir rol oynar. Bununla birlikte, günümüz koşullarında kesitsel görüntüleme tekniklerinin

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## KAYNAKLAR

1. PJ Pickhardt, S Bhalla, DM Balfe. Acquired Gastrointestinal Fistulas: Classification, Etiologies, and Imaging Evaluation. *Radiology*, 2002; 224:9–23
2. Thomas HA. Radiologic investigation and treatment of gastrointestinal fistulas. *Surg Clin North Am* 1996; 76:1081–1094.
3. Delaney CP, Fazio VW. Crohn's disease of the small bowel. *Surg Clin North Am* 2001; 81:137–158.
4. Rubesin SE, Scotinotis I, Birnbaum BA et al. Radiologic and endoscopic diagnosis of Crohn's disease. *Surg Clin Am North* 2001; 81:39–70.
5. Glass RE. The management of internal fistulae in Crohn's disease. *Br J Surg* 1985; 72(suppl):93–95.
6. McClane SJ, Rombeau JL. Anorectal Crohn's disease. *Surg Clin North Am* 2001; 81:169–182.
7. Woods RJ, Lavery IC, Fazio VW, et al. Internal fistulas in diverticular disease. *Dis Colon Rectum* 1988; 31:591–596.
8. Stollman NH, Raskin JB. Diverticular disease of the colon. *J Clin Gastroenterol* 1999; 29:241–252.
9. Inal M, Oguz M, Aksungur E, et al. Biliary-enteric fistulas: report of five cases and review of the literature. *Eur Radiol* 1999; 9:1145–1151.
10. Tsiotos GG, Smith CD, Sarr MG. Incidence and management of pancreatic and enteric fistulas after surgical management of severe necrotizing pancreatitis. *Arch Surg* 1995; 130:48–52.
11. Alexander ES, Weinberg S, Clark RA, et al. Fistulas and sinus tracts: radiographic evaluation, management, and outcome. *Gastrointest Radiol* 1982; 7: 135–140.
12. Ghahremani GG. Radiologic evaluation of suspected gastrointestinal perforations. *Radiol Clin North Am* 1993; 31: 1219–1234.
13. Ott DJ, Gelfand DW. Gastrointestinal contrast agents. *JAMA* 1983; 2380–2384.
14. Karanikas ID, Kakoulidis DD, Gouvas ZT, et al. Barium peritonitis: a rare complication of upper gastrointestinal contrast investigation. *Postgrad Med J* 1997; 73:297–298.
15. Walker CW, Purnell GL, Diner WC. Complications from extravasated retroperitoneal barium: case report and review of the literature. *Radiology* 1989; 173:618–620.
16. Zalev AH. Venous barium embolization, a rare, potentially fatal complication of barium enema: 2 case reports. *Can Assoc Radiol J* 1997; 48:323–326.
17. Reich SB. Production of pulmonary edema by aspiration of water soluble nonabsorbable contrast media. *Radiology* 1969; 92:367–370.
18. Gollub MJ, Bains MS. Barium sulfate: a new (old) contrast agent for diagnosis of postoperative esophageal leaks. *Radiology* 1997; 202:360–362.
19. Semelka RC, Hricak H, Kim B, et al. Pelvic fistulas: appearances on MR images. *Abdom Imaging* 1997; 22:91–95.
20. Goldman SM, Fishman EK, Gatewood OMB, et al. CT in the diagnosis of enterovesical fistulae. *AJR Am J Roentgenol* 1985; 129:1229–1233
21. Yee LF, Birnbaum EH, Read TE, et al. Use of endoanal ultrasound in patients with rectovaginal fistulas. *Dis Colon Rectum* 1999; 42:1057–1064.
22. Lee WJ, Horton KM, Fishman EK. Gastrocolic fistula due to adenocarcinoma of the colon: simulation of primary gastric leiomyosarcoma on CT. *Clin Imaging* 2000; 23:295–297.
23. Levine MS, Kelly MR, Laufer I, et al. Gastrocolic fistulas: the increasing role of aspirin. *Radiology* 1993; 187:359–361.
24. Nam C Yu, Steven S Raman, Monica Patel et al. Fistulas of the Genitourinary Tract: A Radiologic Review. *Radiographics*. Sep–Oct 2004;24(5):1331–52. doi:10.1148/rg.245035219.

25. Parvey HR, Cochran ST, Payan J, et al. Renocolic fistulas: complementary roles of computed tomography and direct pyleography. *Abdom Imaging* 1997; 22:96–99.
26. Jafri SZ, Roberts JL, Berger BD. Fistulas of the genitourinary tract. In: Pollack HM, McLennan BL, eds. Clinical urography. Philadelphia, Pa: Saunders, 2000; 2992–3011.
27. Bryniak SR. Primary spontaneous renocutaneous fistula. *Urology* 1983; 21:516–517.
28. Lewi H. Primary spontaneous renocutaneous fistula (letter). *Urology* 1983; 22:351.
29. Prompt CA, Manfro RC, Ilha Dde O, et al. Caliceal-cutaneous fistula in renal transplantation: successful conservative management. *J Urol* 1990; 143:580–581.
30. Cooper SG, Richman AH, Tager MG. Nephrocutaneous fistula diagnosed by computed tomography. *Urol Radiol* 1989; 11:33–36.
31. Patil KP, Shetty SD, Anandan N, et al. Ureterocolic fistula due to impacted ureteric stone. *Br J Urol* 1992; 70:332–333.
32. el Khader K, Karmouni T, Guille F, et al. Ureteroileal fistula: an unusual complication of Crohn's disease. *Acta Gastroenterol Belg* 2000; 63:312–313.
33. Roberts BJ, Giblin JG, Tehan TJ, et al. Ureteroduodenal fistula. *Urology* 1996; 48:301–302.
34. Braslis KG, Stephens DA. Uretero-fallopian fistula: an unusual complication of open ureterolithotomy. *J Urol* 1993; 150:1900–1902.
35. Billmeyer BR, Nygaard IE, Kreder KJ. Ureterouterine and vesicoureterovaginal fistulas as a complication of cesarean section. *J Urol* 2001; 165: 1212–1213.
36. Sheen J, Lin C, Jou Y, et al. A simple means of making the differential diagnosis of ureterouterine and vesicouterine fistula. *J Urol* 1998; 160: 1420–1421.
37. McBeath RB, Schiff M Jr, Allen V, et al. A 12-year experience with enterovesical fistulas. *Urology* 1994; 44:661–665.
38. Munoz M, Nelson H, Harrington J, et al. Management of acquired rectourinary fistulas. *Dis Colon Rectum* 1998; 41: 1230–1238.
39. McKay HA. Vesicovaginal and vesicocutaneous fistulas: transurethral suture cystorrhaphy as a new closure technique. *J Urol* 1997; 158:1513–1516.
40. Hearn-Stebbins B, Sherer DM, Abramowicz JS, et al. Prenatal sonographic features associated with an imperforate anus and recto-urethral fistula. *J Clin Ultrasound* 1991; 19:508–512.
41. Vasilevsky CA, Belliveau P, Trudel JL, et al. Fistulas complicating diverticulitis. *Int J Colorectal Dis* 1998; 13:57–60.
42. Graham JB. Vaginal fistulas following radiotherapy. *Surg Gynecol Obstet* 1965; 120:1019–1030.
43. Balthazar EJ, Schechter LS. Air in gallbladder: a frequent finding in gallstone ileus. *AJR Am J Roentgenol* 1978; 131: 219–222.
44. Lee JT, Sarovan RM, Belzberg G, et al. Primary aortoenteric fistula: computed tomographic diagnosis of an atypical presentation. *Ann Vasc Surg* 2001; 15:251–254.
45. Baxter AD, Fishwick NG, Jeyapalan K. Case report: ileobronchial fistula. *Clin Radiol* 1998; 53:231–233.
46. Tzeng JJ, Lai KH, Lo GH, et al. Gastropleural fistula caused by incarcerated diaphragmatic herniation of the stomach. *Gastrointest Endosc* 2001; 53:382–384.
47. Weschler RJ. CT of esophageal-pleural fistulae. *AJR Am J Roentgenol* 1986; 147: 907–909.
48. Papanicolaou N, Mueller PR, Ferrucci JT, et al. Abscess-fistula association: radiologic recognition and percutaneous management. *AJR Am J Roentgenol* 1984; 143: 811–815.
49. Kerlan RK, Jeffrey RB, Pogony AC, et al. Abdominal abscess with low-output fistula: successful percutaneous drainage. *Radiology* 1985; 155:73–75.
50. D'Harcour JB, Boverie JH, Dondelinger RF. Percutaneous management of enterocutaneous fistulas. *AJR Am J Roentgenol* 1996; 167:33–38.