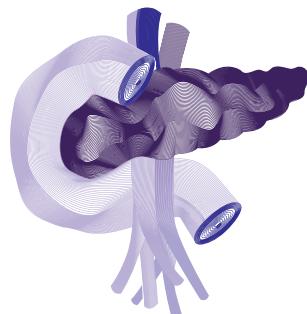


Bölüm 23

Pankreas Gövde ve Kuyruk Tümörlerinde Cerrahi Tedavi



Elif TUNCAY¹

Giriş

Distal pankreatektomi pankreasın malign ya da benign hastalıklarına bağlı gövde kuyruk bölümünün çıkarıldığı bir prosedürdür. Distal pankreatektomi ilk olarak 1884 yılında Billroth tarafından uygulanmıştır. Malign nedenler ile yapılan operasyonlarda çoğunlukla lenf nodu diseksiyonunun komplet olarak yapılabilmesi için dalak ile birlikte en-bloc çıkarılır. Benign ya da borderline lezyonlar için dalak koruyucu teknikler uygulanabilmektedir. Yine benign ya da palyatif amaçlı sınırlı rezeksyonlar olan santral pankreatektomi ya da enükleasyon yapılmaktadır. Bunun yanı sıra malign tümörlerde cerrahi sınır negatifiği ve geniş lenf nodu diseksiyonuna olanak sağlayan radikal antegrade modüler pankreatosplenektomi, çölyak trunkus tutulumunda çölyak aksis rezeksyonlu distal pankreatektomi teknikleri uygulanabilmektedir.

Distal Pankreatektomi Endikasyonları

Distal pankreatektomi adenokarsinom, nöroendokrin tümörler, pankreatik kısıt neoplaziler, metastaz gibi malign ya da premalign nedenlerle yapılmaktadır. Kronik pankreatit, pankreas pseudokistleri, travma ise benign etiyolojiler arasında yer almaktadır. Pankreatik rezeksyonların %25'i distal pankreatektomilerdir. Distal pankreatektomi uygulananmış 232 hastayı içeren bir çalışmada

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KAYNAKLAR

1. Goh BK, Tan YM, Chung YF, et al. Critical appraisal of 232 consecutive distal pancreatectomies with emphasis on risk factors, outcome, and management of the postoperative pancreatic fistula: a 21-year experience at a single institution. *Arch Surg.* 2008 Oct;143(10):956-65. doi: 10.1001/archsurg.143.10.956.
2. Brennan MF, Moccia RD, Klimstra D. Management of adenocarcinoma of the body and tail of the pancreas. *Ann Surg.* 1996 May;223(5):506-11; discussion 511-2. doi: 10.1097/00000658-199605000-00006.
3. Norton JA. Surgery for primary pancreatic neuroendocrine tumors. *J Gastrointest Surg.* 2006 Mar;10(3):327-31. doi: 10.1016/j.jgassur.2005.08.023.
4. Kulke MH, Shah MH, Benson AB 3rd, et al. National comprehensive cancer network. Neuroendocrine tumors, version 1.2015. *J Natl Compr Canc Netw.* 2015 Jan;13(1):78-108. doi: 10.6004/jnccn.2015.0011. PMID: 25583772.
5. Vege SS, Ziring B, Jain R, et al; Clinical Guidelines Committee; American Gastroenterology Association. American gastroenterological association institute guideline on the diagnosis and management of asymptomatic neoplastic pancreatic cysts. *Gastroenterology.* 2015 Apr;148(4):819-22; quiz e12-3. doi: 10.1053/j.gastro.2015.01.015.
6. Tanaka M, Fernández-del Castillo C, Adsay V, et al; International Association of Pancreatology. International consensus guidelines 2012 for the management of IPMN and MCN of the pancreas. *Pancreatology.* 2012 May-Jun;12(3):183-97. doi: 10.1016/j.pan.2012.04.004. Epub 2012 Apr 16.
7. Nealon WH, Walsler E. Surgical management of complications associated with percutaneous and/or endoscopic management of pseudocyst of the pancreas. *Ann Surg.* 2005 Jun;241(6):948-57; discussion 957-60. doi: 10.1097/01.sla.0000164737.86249.81.
8. Kondo Y, Friess H, Tempia-Caliera AA, et al. Duodenum-preserving pancreatic head resection: future standard operation in chronic pancreatitis. *Swiss Surg.* 2000;6(5):254-8. doi: 10.1024/1023-9332.6.5.254.
9. 9-King J, Kazanjian K, Matsumoto J, et al. Distal pancreatectomy: incidence of postoperative diabetes. *J Gastrointest Surg.* 2008 Sep;12(9):1548-53. doi: 10.1007/s11605-008-0560-5. Epub 2008 Jun 10.
10. Hung JH, Wang SE, Shyr YM, Su CH, Chen TH, Wu CW. Resection for secondary malignancy of the pancreas. *Pancreas.* 2012 Jan;41(1):121-9. doi: 10.1097/MPA.0b013e31821fc8f2.
11. Sadowski SM, Neychev V, Millo C, et al. Prospective Study of 68Ga-DOTATATE Positron Emission Tomography/Computed Tomography for Detecting Gastro-Enter-Pancreatic Neuroendocrine Tumors and Unknown Primary Sites. *J Clin Oncol.* 2016 Feb 20;34(6):588-96. doi: 10.1200/JCO.2015.64.0987. Epub 2015 Dec 28.
12. Kubo H, Chijiwa Y, Akahoshi K, et al. Intraductal papillary-mucinous tumors of the pancreas: differential diagnosis between benign and malignant tumors by endoscopic ultrasonography. *Am J Gastroenterol.* 2001 May;96(5):1429-34. doi: 10.1111/j.1572-0241.2001.03794.x.
13. Fernández-del Castillo C, Warshaw AL. Laparoscopy for staging in pancreatic carcinoma. *Surg Oncol.* 1993;2 Suppl 1:25-9. doi: 10.1016/0960-7404(93)90055-4.

14. Doucas H, Sutton CD, Zimmerman A, et al. Assessment of pancreatic malignancy with laparoscopy and intraoperative ultrasound. *Surg Endosc.* 2007 Jul;21(7):1147-52. doi: 10.1007/s00464-006-9093-8.
15. Karabacak I, Satoi S, Yanagimoto H, et al. Risk factors for latent distant organ metastasis detected by staging laparoscopy in patients with radiologically defined locally advanced pancreatic ductal adenocarcinoma. *J Hepatobiliary Pancreat Sci.* 2016 Dec;23(12):750-755. doi: 10.1002/jhbp.408. Epub 2016 Nov 22.
16. Maithel SK, Maloney S, Winston C, et al. Preoperative CA 19-9 and the yield of staging laparoscopy in patients with radiographically resectable pancreatic adenocarcinoma. *Ann Surg Oncol.* 2008 Dec;15(12):3512-20. doi: 10.1245/s10434-008-0134-5.
17. Tomlinson JS, Jain S, Bentrem DJ, et al. Accuracy of staging node-negative pancreas cancer: a potential quality measure. *Arch Surg.* 2007 Aug;142(8):767-723; discussion 773-4. doi: 10.1001/archsurg.142.8.767.
18. Zhou W, Lv R, Wang X, et al. Stapler vs suture closure of pancreatic remnant after distal pancreatectomy: a meta-analysis. *Am J Surg.* 2010 Oct;200(4):529-36. doi: 10.1016/j.amjsurg.2009.12.022. Epub 2010 Jun 9.
19. Zhang H, Zhu F, Shen M, et al. Systematic review and meta-analysis comparing three techniques for pancreatic remnant closure following distal pancreatectomy. *Br J Surg.* 2015 Jan;102(1):4-15. doi: 10.1002/bjs.9653. Epub 2014 Nov 12.
20. Diener MK, Seiler CM, Rossion I, et al. Efficacy of stapler versus hand-sewn closure after distal pancreatectomy (DISPACT): a randomised, controlled multicentre trial. *Lancet.* 2011 Apr 30;377(9776):1514-22. doi: 10.1016/S0140-6736(11)60237-7.
21. Zhang H, Zhu F, Shen M, et al. Systematic review and meta-analysis comparing three techniques for pancreatic remnant closure following distal pancreatectomy. *Br J Surg.* 2015 Jan;102(1):4-15. doi: 10.1002/bjs.9653. Epub 2014 Nov 12.
22. Yamamoto M, Hayashi MS, Nguyen NT, et al. Use of Seamguard to prevent pancreatic leak following distal pancreatectomy. *Arch Surg.* 2009 Oct;144(10):894-9. doi: 10.1001/archsurg.2009.39.
23. Kondo N, Uemura K, Nakagawa N, et al; Hiroshima Surgical Study Group of Clinical Oncology. A Multicenter, Randomized, Controlled Trial Comparing Reinforced Staplers with Bare Staplers During Distal Pancreatectomy (HiSCO-07 Trial). *Ann Surg Oncol.* 2019 May;26(5):1519-1527. doi: 10.1245/s10434-019-07222-0. Epub 2019 Feb 19.
24. Deng Y, He S, Cheng Y, et al. Fibrin sealants for the prevention of postoperative pancreatic fistula following pancreatic surgery. *Cochrane Database Syst Rev.* 2020 Mar 11;3(3):CD009621. doi: 10.1002/14651858.CD009621.
25. Shrikhande SV, Sivasanker M, Vollmer CM, et al; International Study Group of Pancreatic Surgery (ISGPS). Pancreatic anastomosis after pancreaticoduodenectomy: A position statement by the International Study Group of Pancreatic Surgery (ISGPS). *Surgery.* 2017 May;161(5):1221-1234. doi: 10.1016/j.surg.2016.11.021.
26. Egawa S, Okada T, Motoi F, et al. Distal pancreatectomy (with video). *J Hepatobiliary Pancreat Sci.* 2012 Mar;19(2):135-40. doi: 10.1007/s00534-011-0471-9.
27. Guerra F, Pesi B, Amore Bonapasta S, et al. Challenges in robotic distal pancreatectomy: systematic review of current practice. *Minerva Chir.* 2015 Aug;70(4):241-7.

28. Yu X, Li H, Jin C, et al Splenic vessel preservation versus Warshaw's technique during spleen-preserving distal pancreatectomy: a meta-analysis and systematic review. *Langenbecks Arch Surg.* 2015 Feb;400(2):183-91. doi: 10.1007/s00423-015-1273-3.
29. Wang SE, Shyr BU, Chen SC, et al. Robotic distal pancreatectomy: Comparison of spleen-preservation by the Warshaw technique and splenectomy. *Int J Med Robot.* 2018 Oct;14(5):e1922. doi: 10.1002/rcs.1922.
30. Warshaw AL. Distal pancreatectomy with preservation of the spleen. *J Hepatobiliary Pancreat Sci.* 2010 Nov;17(6):808-12. doi: 10.1007/s00534-009-0226-z.
31. Strasberg SM, Drebin JA, Linehan D. Radical antegrade modular pancreateosplenectomy. *Surgery.* 2003 May;133(5):521-7. doi: 10.1067/msy.2003.146.
32. Chun YS. Role of Radical Antegrade Modular Pancreateosplenectomy (RAMPS) and Pancreatic Cancer. *Ann Surg Oncol.* 2018 Jan;25(1):46-50. doi: 10.1245/s10434-016-5675-4.
33. Smoot RL, Donohue JH. Modified Appleby procedure for resection of tumors of the pancreatic body and tail with celiac axis involvement. *J Gastrointest Surg.* 2012 Nov;16(11):2167-9. doi: 10.1007/s11605-012-1925-3.
34. Appleby LH. The coeliac axis in the expansion of the operation for gastric carcinoma. *Cancer* 1953; 6(4):704-7.
35. Klompmaker S, Boggi U, Hackert T, et al. Distal Pancreatectomy with Celiac Axis Resection (DP-CAR) for Pancreatic Cancer. How I do It. *J Gastrointest Surg.* 2018 Oct;22(10):1804-1810. doi: 10.1007/s11605-018-3894-7.
36. Colombo PE, Quenet F, Alric P, et al. Distal Pancreatectomy with Celiac Axis Resection (Modified Appleby Procedure) and Arterial Reconstruction for Locally Advanced Pancreatic Adenocarcinoma After FOLFIRINOX Chemotherapy and Chemoradiation Therapy. *Ann Surg Oncol.* 2021 Feb;28(2):1106-1108. doi: 10.1245/s10434-020-08740-y.
37. Goudard Y, Gaujoux S, Dokmak S, et al. Reappraisal of central pancreatectomy a 12-year single-center experience. *JAMA Surg.* 2014 Apr;149(4):356-63. doi: 10.1001/jamasurg.2013.4146.
38. Lu WJ, Cai HL, Ye MD, et al. Enucleation of non-invasive tumors in the proximal pancreas: indications and outcomes compared with standard resections. *J Zhejiang Univ Sci B.* 2017 Oct.;18(10):906-916. doi: 10.1631/jzus
39. Paye F, Micelli Lupinacci R, et al; French Surgical Association (AFC). Distal pancreatectomy for pancreatic carcinoma in the era of multimodal treatment. *Br J Surg.* 2015 Feb;102(3):229-36. doi: 10.1002/bjs.9708.
40. Bruns H, Rahbari NN, Löffler T, et al; DISPACT Trial group. Perioperative management in distal pancreatectomy: results of a survey in 23 European participating centres of the DISPACT trial and a review of literature. *Trials.* 2009 Jul 26; 10:58. doi: 10.1186/1745-6215-10-58.
41. King J, Kazanjian K, Matsumoto J, et al. Distal pancreatectomy: incidence of postoperative diabetes. *J Gastrointest Surg.* 2008 Sep;12(9):1548-53. doi: 10.1007/s11605-008-0560-5.