

Bölüm 15

LAPAROSKOPİK CERRAHİ KOMPLİKASYONLARI

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GİRİŞ

Günümüzde artan deneyim ve teknolojik gelişmeler sayesinde pek çok laparoskopik operasyon dünya genelinde başarılı bir şekilde ve güvenle uygulanmaktadır. Buna rağmen laparoskopik cerrahide de komplikasyonlarla karşılaşılabilir. Laparoskopik cerrahiye bağlı majör komplikasyonlar vasküler yaralanma, gastrointestinal ya da üriner sistem hasarları, insizyonel herniler ve pnömoperitoneumdan kaynaklanan kardiyorespiratuar problemlerdir. Laparoskopik tekniklerin ve aletlerin geliştirilmesi, cerrahi ekibin tecrübelerinin artması ile birlikte anestezi-deki ilerlemeler, hasta monitorizasyonunun ileri boyutlara ulaşması ve oluşabilecek patofizyolojik değişikliklerin daha erken ve daha iyi anlaşılabilmesi sayesinde mortalite azalmıştır. Laparoskopik cerrahinin mortalite ve morbiditesi her ne kadar düşük olsa da bazen ciddi komplikasyonlar görülebilmektedir. Bu konu başlığında laparoskopik yaklaşıma özgü komplikasyonlardan bahsedilecektir.

HASTA POZİSYONU VE PNÖMOPERİTONEUMA BAĞLI KOMPLİKASYONLAR

Pnömoperitoneum ve hasta pozisyonu; özellikle karbondioksit dengesindeki ve kardiyopulmoner fonksiyondaki değişikliklere bağlı komplikasyonlara yol açarlar. Bu değişiklikler sağlıklı bireyler tarafından genellikle iyi tolere edilir. Veress iğnesi veya trokarın doğru olmayan yerleşimine bağlı ekstraperitoneal insüflasyon ve subkütanöz, preperitoneal, mediastinal, omental amfizem, pnömotoraks, pnömoperikardium gibi komplikasyonlar görülebilir (Lam & ark., 2009). Ekstraperitoneal insüflasyon riski açısından, direkt ve açık teknik yaklaşım Veress iğnesine kıyasla daha düşük riske sahiptir. Yine de bu komplikasyonun nadir görülmesi sebebiyle giriş tekniği seçiminde etkisi olduğunu söylemek mümkün değildir. Ciddi morbidite veya mortalite ile sonuçlanmadığından komplikasyonun eksik bildirimi olasıdır.

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DİĞER KOMPLİKASYONLAR

Port yeri Metastazı

Laparotomide insizyon yeri metastazı görüldüğü gibi laparoskopide de port yeri metastazı görülebilir. Literatürde port yeri metastazı ile ilgili literatür giderek artsa da gerçek insidans henüz net olarak ortaya konulamamıştır. Laparoskopide hematojen ve direkt kontaminasyona ek olarak cerrahi teknik ve pnömoperitoneum da port yeri metastazında etkilidir (Ramirez, Wolf & Levenback, 2003).

Port yeri metastazını önlemek için port yerinin eksizyonu, tümör büyümesini durduran ajanların port yerine uygulanması gibi yöntemler önerilse de bu yöntemlerin işe yaradığına dair yeterli kanıt elde edilememiştir.

KAYNAKLAR

1. Ahmad g, Duffy JM, Phillips K, Watson A. Laparoscopic entry techniques. Cochrane Database Syst Rev 2008; :CD006583
2. Ahmad G, O'Flynn H, Duffy JM, et al. Laparoscopic entry techniques. Cochrane Database Syst Rev 2012; :CD006583.
3. Aloisi A, Pesce JE, Paraghamian SE, et al. Bilateral otorrhagia after robotically assisted gynecologic surgery in the setting of a reduced trendelenburg position and low-pressure pneumoperitoneum:a case report and review of the literature. J Minim Invasive Gynecol 2017; 24:1229-1233.
4. Awad, H., Santilli, S., Ohr, M., Roth, A., Yan, W., Fernandez, S., ... & Patel, V. (2009). The effects of steep trendelenburg positioning on intraocular pressure during robotic radical prostatectomy. *Anesthesia & Analgesia*, 109(2), 473-478.
5. Baggish MS. Sixty-four cases of major vessel injury associated with laparoscopic surgery. *J Gynecol Surg* 2016; 32:73-78.
6. Balzer KM, Witte H, Recknagel S, et al. Anatomic guidelines for the prevention of abdominal wall hematoma induced by trocar placement. *Surg Radiol Anat*. 1999;21:87-89.
7. Bateman BG, Kolp LA, Hoeger K. Complications of laparoscopy– operative and diagnostic. *Fertil Steril*. 1996;66:30-35.
8. Bishoff JT, Allaf ME, Kirkels W, et al. Laparoscopic bowel injury: incidence and clinical presentation. *J Urol*. 1999;161:887-890.
9. Chan JK, Morrow J, Manetta A. Prevention of ureteral injuries in gynecologic surgery. *Am J Obstet Gynecol*. 2003;188:1273-1277.
10. Chan R, Cuthbertson D, Jeng Z, et al. Intraoperative ear bleeding with bilateral otorrhagia during laparoscopic sacrocolpopexy. *Female Pelvic Med Reconstr Surg* 2015; 21:e6-e7.
11. Chapron C, Pierre F, Harchaoui Y, et al. Gastrointestinal injuries during gynaecological laparoscopy. *Hum Reprod*. 1999;14:333-337.
12. Chapron CM, Pierre F, Lacroix S, et al. Major vascular injuries during gynecologic laparoscopy. *J Am Coll Surg*. 1997;185:461-465.

13. Chen LF, Anderson DJ, Hartwig MG, et al. Surgical site infections after laparoscopic and open cholecystectomies in community hospitals. *Infect Control Hosp Epidemiol* 2008; 29:92.
14. Cottin V, Delafosse B, Viale JP. Gas embolism during laparoscopy: a report of seven cases in patients with previous abdominal surgical history. *Surg Endosc*. 1996;10:166–169.
15. Donnez O, Jadoul P, Squfflet J, et al. A series of 3190 laparoscopic hysterectomies for benign disease from 1990 to 2006: evaluation of complications compared with vaginal and abdominal procedures. *BJOG*. 2009;116:492-500.
16. Goldberg JM, Chen CCG, Falcone T. Complication of laparoscopic surgery. In: Basic, Advanced, and Robotic Laparoscopic Surgery, Falcone T, Goldberg JM (Eds), Saunders Elsevier, Philadelphia 2010. p.221.
17. Ostrzenski A, Ostrzenska KM. Bladder injury during laparoscopic surgery. *Obstet Gynecol Surv*. 1998;53:175-180.
18. Gollapalli L, Papapetrou P, Gupta D, Fuleihan SF. Postoperative alopecia after robotic surgery in steep Trendelenburg position: a restated observation of pressure alopecia. *Middle East J Anaesthesiol* 2013; 22:343-345.
19. Hashizume M, Sugimachi K. Needle and trocar injury during laparoscopic surgery in Japan. *Surg Endosc*. 1997;11:1198–1201.
20. Hasson HM, Rotman C, Rana N, et al. Open laparoscopy: 29-year experience. *Obstet Gynecol*. 2000;96:763–766.
21. Hurd WW, Pearl ML, DeLancey JO, et al. Laparoscopic injury of abdominal wall blood vessels: a report of three cases. *Obstet Gynecol*. 1993;82:673–676.
22. Jiang X, Anderson C, Schnatz PF. The safety of direct trocar versus Veress needle for laparoscopic entry: a meta-analysis of randomized clinical trials. *J Laparoendosc Adv Surg Tech A* 2012; 22:362.
23. Joris JL, Chiche JD, Lamy ML. Pneumothorax during laparoscopic fundoplication: diagnosis and treatment with positive end-expiratory pressure. *Anesth Analg* 1995; 81:993.
24. Kadar N. Incisional hernias after major laparoscopic gynaecologic procedures. *Am J Obstet Gynecol*. 1993;168:1493–1495.
25. Kadam PG, Marda M, Shah VR. Carbon dioxide absorption during laparoscopic donor nephrectomy: a comparison between retroperitoneal and transperitoneal approaches. *Transplant Proc* 2008; 40:1119
26. Kim M-S, Kim NY, Lee K-Y, et al. The impact of two different inspiratory to expiratory ratios (1:1 and 1:2) on respiratory mechanics and oxygenation during volume-controlled ventilation in robot assisted laparoscopic radical prostatectomy: a randomized controlled trial. *Can J Anesth* 2015; 62:979-987.
27. Koç, G., Tazeh, N. N., Joudi, F. N., Winfield, H. N., Tracy, C. R., & Brown, J. A. (2012). Lower extremity neuropathies after robot-assisted laparoscopic prostatectomy on a split-leg table. *Journal of endourology*, 26(8), 1026-1029.
28. Lam A, Kaufman Y, Khong SY, et al. Dealing with complications in laparoscopy. *Best Pract Res Clin Obstet Gynaecol*. 2009;23:631–646.
29. Larson GM, Vitale GC, Casey J, et al. Multipractice analysis of laparoscopic cholecystectomy in 1,983 patients. *Am J Surg* 1992; 163:221.
30. Li TC, Saravelos H, Richmond M, et al. Complications of laparoscopic pelvic surgery: recognition, management and prevention. *Hum Reprod Update*. 1997;3:505-515.

31. Magrina JF. Complications of laparoscopic surgery. *Clin Obstet Gynecol* 2002; 45:469.
32. Melville K, Schultz EA, Dougherty JM (1990) Ilioinguinal- iliohypogastric nerve entrapment. *Ann Emerg Med* 19:925-929.
33. Molloy D, Kaloo PD, Cooper M, Nguyen TV. Laparoscopic entry: a literature review and analysis of techniques and complications of primary port entry. *Aust N Z J Obstet Gynaecol* 2002; 42:246.
34. Oh BR, Kwon DD, Park KS, et al. Late presentation of ureteral injury after laparoscopic surgery. *Obstet Gynecol.* 2000;95:337-339.
35. Nezhat C, Childers J, Nezhat F, et al. Major retroperitoneal vascular injury during laparoscopic surgery. *Hum Reprod.* 1997;12:480-483.
36. Opitz I, Gantert W, Giger U, et al. Bleeding remains a major complication during laparoscopic surgery: analysis of the SALTS database. *Langenbecks Arch Surg.* 2005;390:128-133.
37. Pandey R, Garg, Darlong V, et al. Hemiparesis after robotic laparoscopic radical cystectomy and ileal conduit formation in steep Trendelenburg position. *J Robot Surg* 2012; 6:269-271.
38. Peterson HB, Hulka JF, Phillips JM. American Association of Gynecologic Laparoscopists 1988 Membership Survey on Operative Laparoscopy. *Zentralbl Gynakol.* 1990;112:1497-1500.
39. Philips PA, Amaral JF. Abdominal access complications in laparoscopic surgery. *J Am Coll Surg.* 2001;192:525-536.
40. Pring CM. Aortic injury using the Hasson trocar: a case report and review of the literature. *Ann R Coll Surg Engl.* 2007;89:W3-W5.
41. Ramirez PT, Wolf JK, Levenback C. Laparoscopic port-site metastases: etiology and prevention. *Gynecol Oncol* 2003; 91:179.
42. Rosen DMB, Lam AM, Chapman M, et al. Methods of creating pneumoperitoneum: a review of techniques and complications. *Obstet Gynecol Surv.* 1998;53:167-174.
43. Sandadi S, Johannigman JA, Wong VL, et al. Recognition and management of major vessel injury during laparoscopy. *J Minim Invasive Gynecol* 2010; 17:692.
44. Shea JA, Haley MJ, Berlin JA, et al. Mortality and complications associated with laparoscopic cholecystectomy. A meta-analysis. *Ann Surg* 1996; 224:609.
45. Stulz P, Pfeiffer KM (1982) Peripheral nerve injuries resulting from common surgical procedures in the lower portion of the abdomen. *Arch Surg* 117:324-327.
46. Swank HA, Mulder IM, la Chapelle CF, et al. Systematic review of trocar-site hernia. *Br J Surg* 2012; 99:315.
47. Taketani Y, Mayama C, Suzuki N, et al. Transient but significant visual field defects after robot-assisted laparoscopic radical prostatectomy in deep Trendelenburg position. *PLoS One* 2015; 10:e0123361.
48. Tews G, Arzt W, Bohaumilitzky T, et al. Significant reduction of operational risk in laparoscopy through the use of a new blunt trocar. *Surg Gynecol Obstet* 1991; 173:67.
49. Venkatesh R, Kibel AS, Lee D, et al. Rapid resolution of carbon dioxide pneumothorax (capno-thorax) resulting from diaphragmatic injury during laparoscopic nephrectomy. *J Urol* 2002; 167:1387.
50. Voitk AJ, Tsao SG. The umbilicus in laparoscopic surgery. *Surg Endosc* 2001; 15:878.
51. Walsh CA, Pistilli M, Karantanis E. Cardiac arrhythmias and gynaecological laparoscopy: a reminder. *J Obstet Gynaecol* 2010; 30:878-879.

52. Wang PH, Lee WL, Yuan CC, et al. Major complications of operative and diagnostic laparoscopy for gynecologic disease. *J Am Assoc Gynecol Laparosc.* 2001;8:68–73.
53. Wolf JS Jr, Monk TG, McDougall EM, et al. The extraperitoneal approach and subcutaneous emphysema are associated with greater absorption of carbon dioxide during laparoscopic renal surgery. *J Urol* 1995; 154:959.