

REFERENCES FOR INTRAOPERATIVE TESTING OF COLORECTAL ANASTOMOSES

Alexander HC. Colonic decompression and lavage in anterior resection of the rectosigmoid. Surg Gynecol Obstet 1972;135(2):284

“After the anastomosis is completed, a gentle infusion of 200 to 300 milliliters of saline and antibiotic solution will leak through any defect present in the suture line and certainly make repair quite easy.”

Lazorthes F, Chiotassol P. Stapled colorectal anastomoses: preoperative integrity of the anastomosis and risk of postoperative leakage. Int J Colorectal Dis 1986;1(2):96-8

“The demonstration of air leakage enables immediate repair of the anastomosis perhaps avoiding subsequent clinical leakage.”

Gilbert JM, Trapnell JE. Intraoperative testing of the integrity of left-sided colorectal anastomoses: a technique of value to the surgeon in training. Ann R Coll Surg Engl 1988;70(3)158-160

“From our study we would recommend a distending pressure of 25 cm saline...Pressures far in excess of those that we produced have been found within the rectal lumen and recordings of 50 cm water pressure are described...We would not think it safe to stress an anastomosis to such a pressure...this method is useful for demonstrating imperfections in anastomotic technique...”

Davies AH, Bartolo DC, Richards AE, Johnson CD, McC Mortensen NJ. et al. Intra-operative air testing: an audit on rectal anastomosis. Ann R Coll Surg Engl 1988;70:345-7

“This technique is simple, safe and effective and probably helps reduce leakage after colorectal anastomosis.”

Dixon AR. Intraoperative testing of the integrity of left-sided colorectal anastomoses: a technique of value to the surgeon in training. Ann R Coll Surg Engl 1989;71(2):143

“We do feel that saline distension would visibly locate a potential leak more readily than air insufflation.”

Griffith CDM and Hardcastle JD. Intraoperative testing of anastomotic integrity after stapled anterior resection for cancer. J R Coll Surg Edinb 1990;35:106-8

“... a successful test with an air-tight anastomosis can be taken by the surgeon as a reliable indicator that the anastomosis is very unlikely to leak in the postoperative period and that intraoperative repair of stapled anastomotic defects by interrupted sutures is a safe alternative to covering colostomy...”

Beard JD, Nicholson ML, Sayers RD, Lloyd D, Everson NW. Intraoperative air testing of colorectal anastomoses: a prospective, randomized trial. Br J Surg 1990;77:1095-7

“A total of 145 consecutive patients receiving a colorectal anastomosis were randomized to ‘test’ or ‘no test’ once the anastomosis had been completed... Intraoperative air testing and repair of colorectal anastomoses significantly reduces the risk of postoperative clinical and radiological leaks.”

Pritchard GA, Krouma FF, Stamatakis JD. Intraoperative testing of colorectal anastomosis can be misleading. Br J Surg 1990;77:1105

“Intraoperative anastomotic testing, although not of proven value, seems logical as 6 per cent of our stapled anastomoses required suture reinforcement. A satisfactory intraoperative air test, however, will not guarantee uncomplicated healing of the low anastomosis. Leakage in this group must be the result of factors other than the construction of structurally sound staple lines.”

Beard JD. Intraoperative air testing of colorectal anastomoses. Br J Surg 1991;78(1):249

“Mr. Gilbert is probably correct in suggesting that the results of intraoperative testing of colorectal anastomoses might be improved by measurement of the pressure. However, our aim was to use a method of testing which is simple, quick and acceptable to most surgeons. The addition of pressure monitoring is a council of perfection, which most surgeons would probably ignore.”

Stamatakis J. Intraoperative air testing of colorectal anastomoses. Br J Surg 1991;78(1):249

“Our study showed that per anum insufflation of air via a syringe was not a reliable method for predicting postoperative leakage from low rectal anastomoses, and we accept the criticism that failure to insufflate to a measured minimum pressure might have led to spurious results.”

Dixon AR, Holmes JT. Colorectal anastomotic integrity after anterior resection: is there a role for intraoperative testing? J R Coll Surg Edinb 1991;36:35-6

“We describe a 10-year experience of anterior resection for rectal carcinoma in which all stapled anastomoses underwent intraoperative anastomotic testing by saline distension...This technique is simple, effective and probably helps reduce leakage following colorectal anastomoses.”

Yalin R, Aktan AO, Yegen C, Dosluoglu H, Okboy N. Importance of testing stapled rectal anastomoses with air. Eur J Surg 1993;159(1):49-51

“The air test enabled the surgeon to repair or protect five anastomoses (24%). The completeness of the doughnuts was an unreliable test of anastomotic integrity.”

Wheeler JMD, Gilbert JM. Controlled intraoperative water testing of left-sided colorectal anastomoses: are ileostomies avoidable? Ann R Coll Surg Engl 1999;81:105-8

“A water-tight anastomosis was only achieved primarily in 79% of patients as shown by the first leak test, and in 95% of patients after additional sutures, as shown by the second leakage test...Intraoperative testing to a pressure of 30 cm H₂O is helpful in anterior resection, but does not guarantee that an intact anastomosis will remain intact postoperatively.”

Schwab R, Wessendorf S, Gutcke A, Becker HP. Early bursting strength of human colon anastomoses – an in vitro study comparing current anastomotic techniques. *Langenbecks Arch Surg* 2002;386:507-11

“Values between 48 mmHg (65 cm water) and 184 mmHg (250 cm water) were measured for the initial strength of the various anastomoses.”

Schmidt O, Merkel S, Hohenberger W. Anastomotic leakage after low rectal stapler anastomosis: significance of intraoperative anastomotic testing. *EJSO* 2003;29:239-243

“The main problem of anastomotic testing is that you never know how effective one is performing the insufflation without measuring the pressure in the rectum. A more standardized procedure including a well-defined air pressure could be helpful in the future to avoid ineffective testing.”

Ricciardi R, Roberts PL, Marcello PW, Hall JF, Read TE, Schoetz DJ. Anastomotic leak testing after colorectal resection: what are the data? *Arch Surg* 2009;144(5):407-411

“In conclusion, our study of a large number of left-sided colorectal anastomoses indicates a substantial benefit for anastomotic leak testing.”