The Colo-Shower®: A New Irrigator for Intraoperative Rectal Washout

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Intraoperative rectal washout reduces rectal bacterial flora concentration and exfoliated tumor cells but compromises operating theater sterility. I present the Colo-Shower® (Sapi-Med, Alessandria, Italy), a modified, disposable proctoscope for intraoperative rectal irrigation that, by collecting liquid flowing out of the anus during rectal washout, minimizes operating theater pollution. The Colo-Shower®, which has now been used on 100 patients who underwent ileorectal or colorectal anastomosis, is effective and easy to use. [Key words: Intraoperative rectal irrigation; Rectal cancer; Povidone-iodine; Exfoliated tumor cells; Proctoscope]

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After removing a sigmoid or rectal tumor and closing the organ underlying it, many surgeons wash out the isolated rectum with a povidone-iodine or saline solution. This is done to remove exfoliated tumor cells, which may cause local recurrences,[1, 2] and to reduce bacteria before performing a manual or mechanical anastomosis,[3] thereby minimizing the risk of postoperative infection, as has been confirmed in recent experimental studies.[3, 4]

Most surgeons agree on the mechanical preoperative preparation required; polyethylene glycol is usually used.[5–9]

Experimental findings in dogs and humans demonstrate that preoperative enema with povidone-iodine reduces concentrations of aerobic and anaerobic bacteria in the colon more effectively than does saline solution.[4] Its intraoperative use is therefore justified.

Although intraoperative washing is considered as important as preoperative washing, it has always compromised operating theater sterility, thus increasing the risk of postoperative infection. It is therefore of fundamental importance to use a washing technique that obviates contamination of both the operating field and the operating theater.

In 1987, Goodson[10] proposed a new probe to overcome these difficulties. We describe here a new lightweight disposable device, the Colo-Shower® (Sapi-Med, Alessandria, Italy), which also maintains sterile operating conditions but has the advantage of discharging at the lowest possible point, low down on the handle. This watertight system, in a sterile package, consists of a disposable modified anoscope in Technopolymer San, a watertight connector, and two tubes, one for irrigation and the other for collecting liquid flowing out of the anus (Fig. 1).

TECHNIQUE

After closing the rectum or sigmoid colon immediately under the tract to be resected, a well-lubricated anoscope is inserted into the anus (Fig. 2), the discharge tube is connected to the handle,

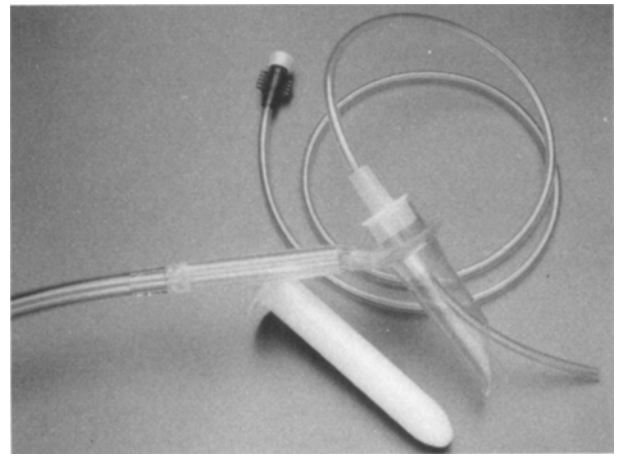

Figure 1. The sterile kit contains a disposable modified anoscope with washing and discharging tubes.

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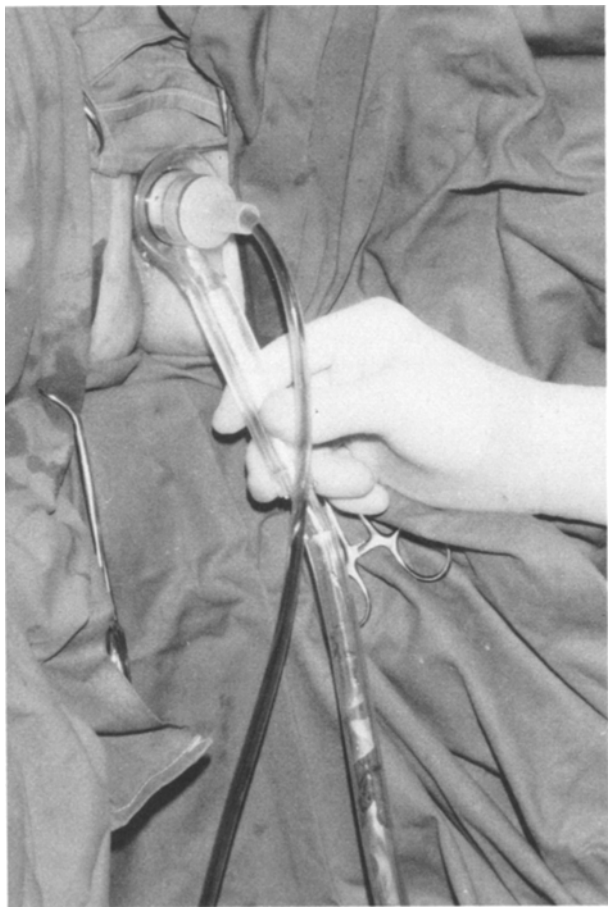

Figure 2. The Colo-Shower® during an intraoperative rectal washout.

the mandrin is removed, and the collector is positioned. Under the control of the first surgeon, the irrigation tube is pushed along the collector until it reaches the highest possible proximal point in the rectum or sigmoid colon. Lavage is then started until the liquid flowing from the anus contains residual feces or mucus. Usually 500 ml of a 5 percent povidone-iodine solution is sufficient. The first surgeon checks tube positioning and organ distention during the washout procedure. The unloading tube is closed for a few seconds intermittently to enhance contact between the disinfectant and the rectal mucosa.

After irrigation, the inner tube is removed and, to eliminate any residual fluid, the anoscope is withdrawn by connecting the collecting tube to an aspirator.

DISCUSSION

Since June 1990, the Colo-Shower® has been used in our department on 100 patients who underwent surgery for: adenocarcinoma of the descending colon, the sigmoid colon, or the middle or proximal rectum (95 patients); diffuse polyposis of the colon (three patients); or ulcerative colitis (two patients). Eighty-eight colonic resections were performed using termino-terminal (T-T) colorectal anastomoses, and four partial (subtotal) colectomies were performed using ileorectal anastomoses: three latero-terminal (L-T) and one T-T.

The device was simple to use. No deaths related to its use occurred. Two patients presented superficial hematomas of the rectal mucosa, which had no effect on anastomotic healing.

The Colo-Shower® can be used intraoperatively, moreover, to rule out the presence of anastomotic dehiscences, after closing the exit tube. After a mechanical anastomosis, whether it is a Knight-Griffen,[11] a T-T, or an L-T, many surgeons use a hydropneumatic test by insufflating air into the rectum. The rectum is closed above the anastomosis, which is immersed in saline solution in the pelvis, after closing the exit tube. Others inject a solution containing a dye (such as methylene blue) into the rectum.

The instrument is unsuitable for patients with anastomosis of the lower third of the rectum because it cannot penetrate deep enough into the anus, but it can be used in all proctologic surgery calling for a reduction in bacterial pollution from perineal wounds, as occurs in anterior, posterior, or total sphincteric repair, or a posterior approach to the rectum.

CONCLUSION

The device is effective and easy to use, allowing a good rectal washout while maintaining operating theater sterility.

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