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Feasibility of an Intraluminal Bypass Device in Low Colorectal Anastomosis

Preliminary Results in a Porcine Model

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Abstract

Background: The Cologuard CG-100 is a novel intraluminal bypass device designed to reduce the clinical outcomes associated with low colorectal anastomotic leak. The device is inserted transanally, anchored to the colon above the anastomosis, and deployed intraluminally to cover the anastomosis from within. The purpose of this study was to evaluate the safety and performance of the device in a porcine model. **Method:** Twelve pigs underwent low colorectal anastomosis with insertion of the Cologuard CG-100 device. Contrast material injection, abdominal X-ray, and histologic studies were used to evaluate sealing quality, device positioning, and tissue damage, respectively. The surgeons completed a usability and satisfaction questionnaire after completion of the procedure. **Results:** Absolute sealing was observed in all 4 animals euthanized immediately after surgery. In the other 8 animals, the device was kept in situ for 10 days and then extracted. X-ray films with injection of contrast material through a designated injection tube before device removal showed that the sheath and ring were correctly placed.

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position, and extract. *Conclusion:* The Cologuard CG-100 device efficiently reduced contact between near colonic and low colorectal anastomosis in a porcine model and is easily deployed and extracted. It holds promise for possible clinical use pending further studies.

Keywords

colorectal surgery, anastomotic leak, intraluminal device



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