Nursing Experience in Endoscopic Mucosal Resection of a Sessile Colonic Adenomatous Polyp: A Postprint

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Abstract

This article summarizes the nursing experience of a patient undergoing endoscopic mucosal resection (EMR) for a colonic sessile adenomatous polyp, encompassing targeted nursing measures including preoperative psychological care, instrument preparation, and patient preparation, intraoperative nursing, and postoperative nursing. Through a comprehensive nursing model characterized by thorough preoperative preparation, close surgical coordination, and meticulous postoperative care, the success of endoscopic mucosal resection for colonic adenomatous polyps is ensured, patient pain is alleviated, symptoms are improved, and recovery is promoted.

Full Text

Nursing Experience in Endoscopic Mucosal Resection for a Patient with Colonic Broad-Based Adenomatous Polyp

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Abstract

This paper summarizes the nursing experience of a patient with colonic broad-based adenomatous polyp undergoing endoscopic mucosal resection (EMR), including targeted nursing measures such as preoperative psychological care, in-

strument preparation, and patient preparation; intraoperative nursing; and postoperative care. Through a comprehensive nursing model featuring thorough preoperative preparation, close surgical cooperation, and meticulous postoperative care, the success of EMR for colonic adenomatous polyps was ensured, patient pain was alleviated, symptoms were improved, and recovery was promoted.

Keywords: Adenomatous polyps; Endoscopic mucosal resection; Nursing care

Introduction

Gastrointestinal polyps are common clinical conditions pathologically classified into hyperplastic polyps, adenomatous polyps, and other types. Some polyps, such as broad-based adenomatous polyps, have malignant potential. Timely detection and endoscopic biopsy with resection are crucial for reducing the incidence of gastrointestinal tumors [1]. Colonic polyps are common intestinal diseases with high carcinogenic risk requiring prompt treatment [2]. Conventional endoscopic high-frequency electroresection often fails to completely resect broad-based adenomatous polyps and carries higher risks of perforation and hemorrhage. Endoscopic mucosal resection (EMR), which involves submucosal injection to create a fluid cushion before resection, offers advantages including controlled coagulation depth, low postoperative complication rates, and minimal recurrence, making it increasingly widely applied [3]. Our department successfully treated a case of broad-based adenomatous polyp using EMR with favorable outcomes.

Case Report and Methods

The patient was a male admitted due to abdominal pain and distension. Colonoscopy at our endoscopy center revealed a broad-based adenomatous polyp in the colon (number of lesions: 1, maximum diameter: [data missing in original]). The patient had no history of colorectal surgery, coagulation dysfunction, or thrombocytopenia, and had not taken non-steroidal anti-inflammatory drugs or antiplatelet agents within one week. No malignant lesions were present in other systems. Endoscopic mucosal resection was performed according to medical orders.

EMR Procedure

Using a mucosal injection needle, 1:10,000 epinephrine solution mixed with indigo carmine and glycerol fructose was injected into the submucosal layer beneath the lesion. The injection was performed while withdrawing the needle to avoid entering the muscularis propria or serosal layer. Endoscopic observation of the polyp base lifting and separating from the muscular layer (positive lifting sign) confirmed adequate elevation. For lesions with prominent elevation, an appropriate snare was selected and adjusted to optimal size to completely capture the polyp. The snare was tightened to suspend the lesion within the lumen, and high-frequency blended current was used to resect the lesion. For lesions >2

cm that could not be removed en bloc, endoscopic piecemeal mucosal resection was performed. The resected specimen was retrieved and sent for pathological examination [4].

During the procedure, nursing staff should observe the patient' s facial expressions to assess discomfort [5]. Carefully inspect the resection site for exposed vessels or bleeding, which should be managed promptly with argon plasma coagulation or hot biopsy forceps. For large defects, deploy endoscopic clips to prevent delayed bleeding. In active bleeding, nurses must cooperate with physicians to rotate the clip handle according to vessel orientation and wound location to achieve hemostasis. After resection, nurses assist in retrieving specimens with foreign body forceps for pathological examination.

For polyps >2 cm requiring piecemeal resection, nurses should coordinate with physicians to adjust patient positioning in real-time to maintain optimal endoscopic visualization. During colonic polyp treatment, maintain a clear surgical field by thoroughly suctioning blood and fecal fluid.

Perioperative Nursing Care

Preoperative Preparation

First, strictly adhere to contraindications for endoscopic examination and therapy. Complete preoperative evaluations including blood routine, coagulation profile, and electrocardiogram to identify severe cardiopulmonary disease or bleeding tendencies. Review antiplatelet medications such as aspirin and clopidogrel, which must be discontinued one week prior to surgery.

Second, provide psychological care by explaining the safety and advantages of EMR to the patient and family to reduce anxiety. Discuss potential complications and management strategies to obtain full understanding and cooperation. Introduce successful cases and the operator' s expertise to build confidence [6].

Third, ensure proper bowel preparation by instructing patients to consume a low-residue diet 3 days before surgery and fast for 8 hours and avoid water for 4 hours preoperatively [7]. Oral polyethylene glycol electrolyte powder is administered for bowel preparation until stools become clear and watery.

Fourth, prepare and test all instruments preoperatively to ensure proper function. Connect oxygen supply and monitor vital signs including oxygen saturation, heart rate, and blood pressure. Fix the grounding electrode plate to the patient' s buttock or thigh and set appropriate electrocautery parameters. Prepare snares, endoscopic injection needles, rotatable clips, syringes, epinephrine, and normal saline.

Intraoperative Cooperation and Nursing

Nursing staff should understand EMR procedural steps thoroughly. Check the injection needle for integrity and fill it with indigo carmine-glycerol fructose solution before lesion resection. Insert the needle into the submucosal layer

through the biopsy channel. For broad-based adenomatous polyps, submucosal injection is performed first. The needle tip penetrates the submucosa to inject epinephrine-saline solution, with injection volume controlled at 3-5 mL depending on lesion location and size, until the lesion elevates sufficiently and turns pale, achieving adequate separation from submucosal tissue and hemostatic compression. Inadequate elevation may indicate excessive needle depth into the muscular layer.

During the procedure, nurses should observe the patient' s facial expressions to assess discomfort [8]. Carefully inspect the resection site for exposed vessels or bleeding, which should be managed promptly with argon plasma coagulation or hot biopsy forceps. For large defects, deploy endoscopic clips to prevent delayed bleeding. In active bleeding, nurses must cooperate with physicians to rotate the clip handle according to vessel orientation and wound location to achieve hemostasis. After resection, nurses assist in retrieving specimens with foreign body forceps for pathological examination.

For polyps >2 cm requiring piecemeal resection, nurses should coordinate with physicians to adjust patient positioning in real-time to maintain optimal endoscopic visualization. During colonic polyp treatment, maintain a clear surgical field by thoroughly suctioning blood and fecal fluid.

Postoperative Care

Observe for post-EMR abdominal distension and pain, which often result from gastrointestinal insufflation and electrothermal mucosal injury. Most cases resolve without special intervention [9]. Monitor closely for delayed perforation, including worsening abdominal pain, tenderness, muscle rigidity, and bowel sounds.

Postoperative fasting for 24 hours is recommended, followed by gradual progression from liquid to regular diet according to recovery status [10]. Avoid coarse, hard, and spicy foods; use laxatives if necessary to maintain bowel regularity. Advise rest and avoidance of strenuous activity and heavy labor. Endoscopic follow-up is typically scheduled at 3 months to assess healing and residual lesions, with additional treatment if necessary.

Outcomes

EMR successfully resected the polyp. Pathology confirmed colorectal adenomatous polyp (1 case) and inflammatory polyp. Intraoperative minor oozing was successfully controlled with endoscopic clips. No residual or recurrent lesions were observed at 3-month follow-up.

Discussion

Colonic polyps are common clinical conditions characterized by high incidence, recurrence risk, carcinogenic potential, and treatment challenges, causing symptoms such as abdominal pain, diarrhea, hematochezia, intussusception, anemia,

and malnutrition that severely impact quality of life. Effective intervention is therefore clinically important [11]. Broad-based adenomatous polyps are premalignant lesions closely associated with gastrointestinal tumors. Colorectal cancer is strongly correlated with colorectal adenomatous polyps, which may progress to cancer within 5-10 years if untreated [12].

Recent advances in endoscopic technology and instruments have enabled complete resection of large gastrointestinal polyps. EMR has emerged as an important procedure for early gastrointestinal tumors [13]. EMR involves submucosal saline injection to create a fluid cushion before resecting large mucosal specimens, offering increased resection depth and area for curative intent while significantly reducing perforation risk. This safe and reliable technique with low complication rates is widely favored by patients. Compared with conventional surgery, EMR offers higher safety, minimal invasiveness, cost savings, and provides intact specimens for pathological examination. EMR minimizes surrounding tissue injury, reducing complications such as perforation and hemorrhage while improving surgical success [14].

Successful EMR requires not only skilled endoscopic technique but also crucial nursing cooperation. Comprehensive preoperative preparation, familiarity with procedural steps, seamless intraoperative cooperation, close postoperative monitoring for complications, and proper discharge guidance are essential for optimizing EMR outcomes. Common endoscopic complications such as bleeding and perforation are closely related to nursing coordination. Enhanced perioperative nursing is vital for reducing complication rates.

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Note: Figure translations are in progress. See original paper for figures.