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Intraoperative transanal fiberoptic colonoscopy

Report of six cases

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Intraoperative transanal fiberoptic colonoscopy is presented as an alternative to transcolonic procedures to remove colonic polyps, or to excise or biopsy other intraluminal lesions. This method should be considered when the standard transanal colonoscopy has failed. The results with this procedure have been excellent. The method also can be applied to patients who have colonic lesions and are to undergo elective procedures such as hysterectomy and cholecystectomy.

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The use of the flexible fiberoptic colonoscope in the diagnosis of colonic disease and the removal or biopsy of most colonic lesions located above the rectosigmoid have become fairly well standardized. The advantages of this technique are its safety and the lack of the operative complications which may occur with a laparotomy and transcolonic polypectomy, excision or biopsy. The mortality rate for laparotomy and transcolonic removal of a lesion is approximately 0.5% and the incidences of morbidity, mainly wound infection, range from 10% to 30%. Fiberoptic colonoscopy circumvents most of these problems.

However, even in the hands of the most experienced colonoscopist, passage of the colonoscope and location of the polyp or other lesion may be impossible in the occasional patient. Most frequently, the bowel may be impossible to negotiate because of fixation in the pelvis from previous surgery or inflammation. Often a very redundant sigmoid loop or a high lying and sharply angulated splenic flexure prevents passage of the instruments. The lesion may be inaccessible because it is located in a large
Fox and Haas

redundant cecum or ascending colon. The lesion may be located on the wall of the bowel in such a way that it remains hidden from the view of the operator. Also, since transanal colonoscopy is usually performed with the patient sedated, but awake, an occasional patient will be completely uncooperative.

When a transanal attempt was unsuccessful, two courses of action were previously available: Transabdominal transcolonic exploration could be performed, or the patient's condition could be monitored with frequent barium enemas. If the latter course was selected, any change in the size or configuration of the lesion could be identified. As this method is tedious and uncomfortable, patient acceptance of it is often quite low; but it may be the procedure of choice for patients who are at high risk for an abdominal exploration. However, histological diagnosis is lacking in these cases.

In a few patients, to minimize the risks and yet to accomplish polypectomy or identify a suspected lesion, laparotomy has been combined with transanal colonoscopy.

**Method**

Following routine bowel preparation, the patient is positioned on the operating room table as for a synchronous combined abdominoperineal resection. Once the abdomen is opened by the surgical team, the colonoscopist introduces the instrument via the anus. The colon should be occluded above the suspected site of the lesion in order not to distend the colon unnecessarily by the air insufflated during the examination. The colonoscope is advanced in the usual fashion, but with transabdominal guidance. Once the polyp or other lesion is located, snare excision or biopsy is undertaken. The ability of the surgeon can hasten the procedure of guiding the colonoscope to the site and manipulating the colon so that the lesion can be readily snared or biopsied. Once the lesion has been removed or biopsied, the rest of the colon can be completely and easily examined. As the colonoscope is withdrawn, the insufflated air is removed to facilitate closure of the abdominal incision.

The following three case reports illustrate the procedure and its advantages.

**Case report #1**

A 63-year-old white woman was hospitalized on October 5, 1975, for evaluation of a generalized dermatitis and a 27-pound weight loss. An occult malignancy was suspected and an extensive evaluation was performed. A barium enema revealed two 2 cm-sized polyps in the right transverse colon.

On October 23, 1975, transanal colonoscopy was attempted in the colonoscopy suite, but the endoscopist was unable to pass the colonoscope around the splenic flexure. Intraoperative transanal colonoscopy was recommended and accepted by the patient.

On October 27, 1975, laparotomy and transanal colonoscopy were performed. With the assistance of the operating surgeon, the colonoscope was easily passed into the transverse colon. One polyp was easily removed, but after the second polyp was snared there was a malfunction of the snare and a transcolonic colotomy and polypectomy were performed. Both polyps were reported to be adenomatous. The patient had an uneventful postoperative course and was discharged on November 6, 1975.

Comment: This case demonstrates the value of intraoperative transanal colonoscopy and polypectomy. The entire colon was inspected and two polyps excised. Although a colotomy had to be performed, this was due to a mechanical malfunction of the equipment and should rarely occur.

**Case report #2**

A 36-year-old white woman was hospitalized on January 5, 1973, for evaluation of right lower quadrant pain and diarrhea. The patient had undergone an appendectomy at 13 years of age. The physical examination and laboratory studies were within normal limits except for a cecal defect revealed by the barium enema.

The patient was scheduled for transanal colonoscopy in the colonoscopy suite, but after discussing the procedure, she insisted on intraoperative colonoscopy.
Intraoperative transanal colonoscopy

On January 10, 1973, the patient underwent an uneventful intraoperative transanal colonoscopy. The lesion in the cecum was found to be an inverted appendiceal stump. The patient had a benign postoperative course and was discharged on January 19, 1973.

Comment: This case illustrates the value of colonoscopy in evaluating suspicious lesions found by a barium enema. Combined inspection, palpation and colonoscopic visualization were adequate to establish the nature of the lesion. Previously, a cecotomy and excision of this lesion would have been performed.

Case report #3

A 45-year-old white woman was evaluated for a history of intermittent episodes of right upper quadrant pain. Gastrointestinal roentgenograms showed cholelithiasis and a possible polyp in the splenic flexure of the colon. The patient was admitted to the hospital on May 26, 1975, for elective cholecystectomy and polypectomy.

Results of physical examination and laboratory studies were within normal limits except for the findings by x-ray of gallstones and possible colonic polyp. On May 27, 1975, transanal colonoscopy was attempted in the colonoscopy suite, but the instrument could not be passed through the sigmoid curve. On May 28, 1975, intraoperative transanal colonoscopy was performed to the cecum and no polyps were found. A routine cholecystectomy was made quite difficult by the marked distention of the entire colon. The closure of the incision was also made difficult.

Comment: This case demonstrates a valid reason for combining laparotomy with transanal colonoscopy. The patient had a suspected polyp in the splenic flexure of the colon and proven cholelithiasis. Since the patient was to undergo laparotomy for cholecystectomy, it would seem logical to perform intraoperative colonoscopy in the operating room rather than colonoscopy in the out-patient unit. However, we prefer the out-patient unit because in this situation, the colonoscopist is in much better control of the procedure and can work in more comfort and leisure than in the operating room. Also, if colonoscopy and polypectomy or biopsy are performed prior to laparotomy, a histological diagnosis based on permanent section is available and an appropriate operation can be planned.

Results

Intraoperative transanal colonoscopy has been performed on six patients. Five of these patients had unsuccessful transanal colonoscopy in the colonoscopy unit, and the other patient refused this procedure. In each case, the procedure was performed easily, the lesion identified, if present, and polypectomy performed in three patients. There was no morbidity or mortality associated with the procedure.

Discussion

The removal of all polyps larger than 1 cm in diameter has been an accepted surgical procedure because of possible malignancy. In most situations, the polyps can be easily removed by the transanal colonoscopic procedure, with minimal morbidity and mortality. Other suspicious lesions in the colon are also often evaluated by transanal colonoscopy. The difficulties with prolonged observation and repeated contrast studies of the colon are primarily in patient anxiety, expense, and discomfort and in the uncertainty of the histologic composition of the lesion.

When the patient has the combination of increased surgical risk (because of obesity, diabetes, or heart disease), and a lesion that is inaccessible to the colonoscope, the physician is faced with a difficult therapeutic decision. The alternative method we propose—intraoperative transanal colonoscopy with either polypectomy, excision or biopsy of the lesion—reduces the anesthesia time and eliminates the need to transgress the colonic wall. Both morbidity and mortality are certainly far less than occurs with the transcolonic procedures.

The procedure described should be chosen for all patients who have clinically significant colonic polyps or other lesions for which the standard approach is unsuccessful. The procedure also can be applied to patients with colonic polyps or other lesions who require laparotomy for such
Fox and Haas

reasons as hysterectomy and cholecystectomy.

With the increasing experience and expertise of the colonoscopist and the rapid improvement of the instrumentation available, intraoperative transanal colonoscopy should be necessary only rarely. The six cases reported were from an experience of 400 colonoscopies. With the passage of time, we are doing the intraoperative procedure less frequently.

References


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