

Although some of these instruments, such as the bronchoscope, may be used either with or without an elaborate optical system and therefore may be listed in two classifications, the grouping as a whole is useful, particularly with regard to making a photographic record of the observation. Photographs may be taken with the endoscopes listed in group 3 by simply attaching a camera to the instrument. However, additional lens systems must be attached to the instruments listed in the other two groups before a camera can be used to record observations photographically.

Endoscopes are among the physician's and surgeon's most important diagnostic tools. Through the collaboration of physician and physicist the construction of the modern endoscope has been greatly advanced and has reached a peak in the flexible gastroscope combining some forty lenses in its optical system with a rather elaborate system of illumination.

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PROCTOSCOPY

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I wish to pay tribute to the many workers, too numerous to mention, who by clinical observation and development of new equipment have made proctoscopy a safe, relatively easy, and increasingly useful fact-finding procedure in the diagnosis and management of pathologic conditions of the rectum. Owing to refinements in procedure in this phase of endoscopy, diagnosis is more accurate and treatment more intelligent today than at any time in medical history. Indications for proctosigmoidoscopy may be summarized briefly as any rectal complaint. Unfortunately in 25 per cent of all cases treatments or operations for hemorrhoids have preceded the discovery of cancer of the rectum or sigmoid by less than six months. No specific procedure should be done on the rectum without proctosigmoidoscopy. I know of no contraindication except when digital examination shows it to be impossible, in which case plans may be made to make it possible.

Success in obtaining information by endoscopy depends in great measure upon making the examination as painless as possible. This is especially true of proctoscopy. We know from the patients themselves

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that examination and operation are delayed because they are reputed to be very painful. This need not be so, and precautions must be taken to see that the examination, while not pleasant, is not painful. To fulfill this requirement it is essential that the patient be properly prepared and that the instruments be well lubricated and familiar to the hands of the examiner.

To avoid the necessity for repeating the examination, the bowel must be cleansed. If carcinoma or diverticulitis with possible obstruction is suspected, it probably is not wise to prescribe a powerful laxative. In most cases the patient need only be instructed to take an enema the night before and on the day of examination.

It is essential that both patient and examiner be in as comfortable a position as facilities permit. The patient may be placed in the left lateral, Sims', knee-chest, or knee-elbow position, or in the inverted position made possible by a tilt table. The lithotomy position is a hindrance. I believe the inverted position is superior to others. It is more comfortable for both patient and examiner.

Two very important procedures must precede proctoscopy, namely, inspection and digital palpation of the rectum. Simple inspection with the buttocks separated by the hands often reveals conditions which will cause pain if the proctoscope is introduced and in which it would be foolish to attempt proctoscopy. If the patient is hurt before information is obtained, he is likely not to come back for further investigation or operation. A painful fissure is easily observed, and when present some type of anesthesia must be given before instrumentation is attempted. If inspection is negative, digital examination is carried out. One should not have to be reminded that not only the tip but the entire gloved finger should be lubricated. Vaseline is sticky and is a poor substitute for a water soluble jelly. The finger should be inserted slowly and should be withdrawn in the same manner. By this procedure information is obtained regarding spasticity of the sphincter and direction of the anal canal as well as the presence of obstruction, such as stricture or tumor, which may make proctoscopy painful or impossible. The confidence of the patient may be attained by stating that the instrumentation will not be more painful than the digital examination.

A number of good proctoscopes and sigmoidoscopes are available today, some with illumination at the proximal end of the instrument and some at the distal, and the operator may choose one to his own liking. If digital palpation reveals a pathologic condition, the 4 inch proctoscope is usually inserted first. If not, the sigmoidoscope should be used at once to avoid the necessity for two insertions.

The well lubricated proctoscope is inserted in the rectum through the anus in the direction indicated by the digital examination, the plunger is removed, and the field is brought under direct observation. The great value of the inverted position is that, as soon as the plunger is removed, air passes into the rectum and the walls balloon out, making the insertion of the proctoscope under direct vision much easier for the examiner and less distressing for the patient. After the instrument has been inserted as high as possible, the mucosal surface is minutely examined as the instrument is slowly withdrawn. The use of suction apparatus or long cotton applicators is essential to keep the field clean. The proctoscope should be withdrawn as gently as it is inserted. Painless proctoscopy will inspire the patient's confidence if any operative procedure is to follow.

PERITONEOSCOPY

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Peritoneoscopy is being recognized as a valuable diagnostic procedure. In the few cases which are difficult to diagnose without exploratory laparotomy endoscopy of the peritoneal cavity and its contents may prove advantageous.

Although many uses for the peritoneoscope have been described, its practical use seems to be limited to the investigation of (1) ascites in the differential diagnosis of cirrhosis of the liver, generalized abdominal carcinomatosis, and tuberculous peritonitis and (2) liver disease, especially with hepatomegaly.

The value of the procedure is necessarily limited by what can be seen in the peritoneal cavity. The liver, falciform ligament, omentum, anterior surfaces of the small and large intestines, fundus of the gall-bladder, pelvic viscera, parietal peritoneum, and occasionally the cecum and appendix can be seen.

Most authors agree that peritoneoscopy is contraindicated in (1) acute inflammation in the abdominal cavity, lest the infection spread; (2) distention, which increases the likelihood of perforating the bowel; and (3) the presence of known adhesions, although previous surgery does not absolutely contraindicate the procedure. In several cases adhesions from previous surgery in the upper right quadrant prevented observation of the part in question. Although it is not a contraindication, obesity may be troublesome since a large, fatty omentum may float over or adhere to the visceral or parietal peritoneum or both.