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—Original Article—

A NEWLY IMPROVED SLIDING TUBE FOR COLONOSCOPY FOR KEEPING THE SIGMOID COLON IN A STRAIGHT CONDITION

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Summary

Although a sliding tube made of plastics is very effective to keep the sigmoid colon in a straight position, there is some difficulty in handling the colonoscope, being restricted by the length of the scope. For the purpose of covering the demerits of the conventional sliding tube, a new slit sliding tube which is made up of three parts was devised by us. After straightening the sigmoidal loop, the three parts of the apparatus are joined together. Then the slit sliding tube is inserted into the descending colon with safety and ease. By using the slit sliding tube, handling of the colonoscope is scarcely restricted and becomes easy. Moreover, the slit sliding tube can be used even for the shorter scopes, by which the distal parts of the colon can be more easily examined in comparison with conventional techniques.

Key Words: *colonoscopy, slit sliding tube.*

Manipulation of the colonoscope is sometimes very difficult when there exists a marked loop formation in the sigmoid colon. In order to keep the sigmoid colon in a straight position, a sliding tube made of plastics was devised by Makiishi et al.[1] and Deyhle[2] respectively. Since then, the sliding tube has been widely used in colonoscopy to straighten the loop of the sigmoid colon and to advance the scope into the ileocecal area more quickly and easily. However, some disadvantages have been found in using the conventionally used sliding tube. There is some difficulty in handling the colonoscope attached to the above mentioned sliding tube, being restricted by the length of the colonoscope.

For the purpose of covering the demerits of the conventional instrument, a new sliding tube (slit sliding tube) has been devised. In this brief communication, we would like to introduce the new sliding tube and compare this with the old instrument.

Instruments and Techniques

The slit sliding tube (**Table 1**) is made up of three parts; an inner hard plastic tube, an outer elastic tube and a fixing screw (**Fig. 1**). The inner tube measures 40 cm in length and 1.6 cm in internal diameter, and is slit lengthwise. The outer tube is 43 cm long and has metal frames at its both ends for fixing the inner tube together.

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Table 1. Specification of the slit sliding tube

whole length	43.0 cm
effective length	41.0 cm
internal diameter	1.6 cm
external diameter	2.0 cm
max. external diameter	2.8 cm

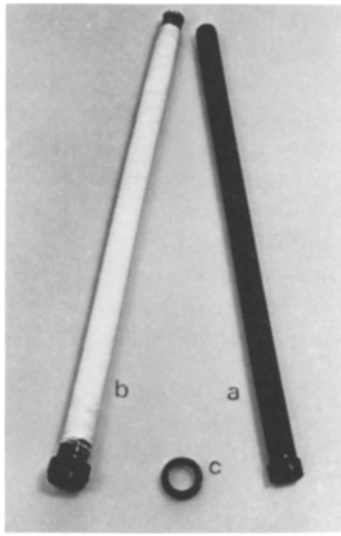

Fig. 1. Three parts of the slit sliding tube (a; inner tube, b; outer tube, c; fixing screw).

Prior to insertion of the colonoscope, the outer tube and the fixing screw are attached to the scope and are placed near its handle. With the contraction of the elastic outer tube to approximately 10 cm of length, the colonoscope is employed in the usual manner. When the tip of the scope reachs the splenic flexure of the colon and the sigmoidal loop is let down, the inner tube is attached to the scope and then the three parts of the apparatus are joined together in a short time. Then the sliding tube is inserted safely into the middle or upper parts of the descending colon in the same manner as the conventional sliding tube (**Fig. 2**). Damages to the scope by using the slit sliding tube have not been observed in our experiences.

Discussion

As compared with the conventional apparatus, the newly devised sliding tube with a

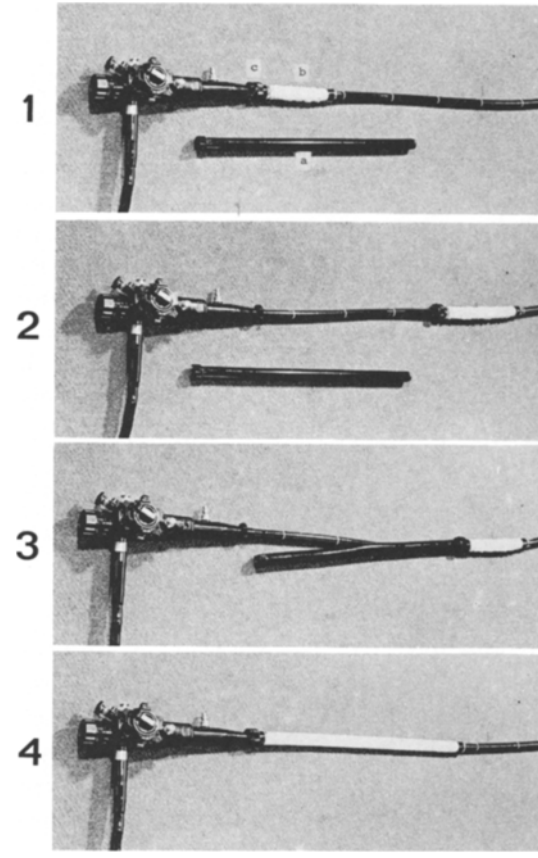

Fig. 2. Manipulation of the slit sliding tube (a; inner tube, b; outer tube, c; fixing screw).

1. The outer tube and the fixing screw are attached to the scope and are placed near the handle prior to colonoscopy.
2. When the tip of the scope reachs to the splenic flexure and the sigmoidal loop is straightened, the outer tube is moved to the distal part of the scope.
3. The inner tube is attached to the scope.
4. The inner and the outer tube are fixed tightly together with the fixing screw. Then the sliding tube is advanced to the descending colon.

slit has several advantages. It has been well known that the colonoscope with the old sliding tube makes it difficult to turn the scope itself in straightening the sigmoid colon. Handling of the colonoscope with the slit sliding tube is easy for turning the scope.

Moreover, the colonoscope is restricted by the length of the conventional sliding tube (about 45 cm) until the scope advances to the splenic flexure. After straightening the sigmoidal loop and putting the sliding tube into the middle or upper parts of the descending colon, the full length of the scope can be used for manipulation.

By using this slit sliding tube, the scope is restricted only by the length of the shortened outer tube (about 10 cm). The conventional sliding tube is available in a long colonoscope of which effective length is more than 180 cm. On the other hand, the new sliding tube can be used even in the shorter scopes, by which the distal parts of the colon can be more easily examined compared with the conventional techniques.

References

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