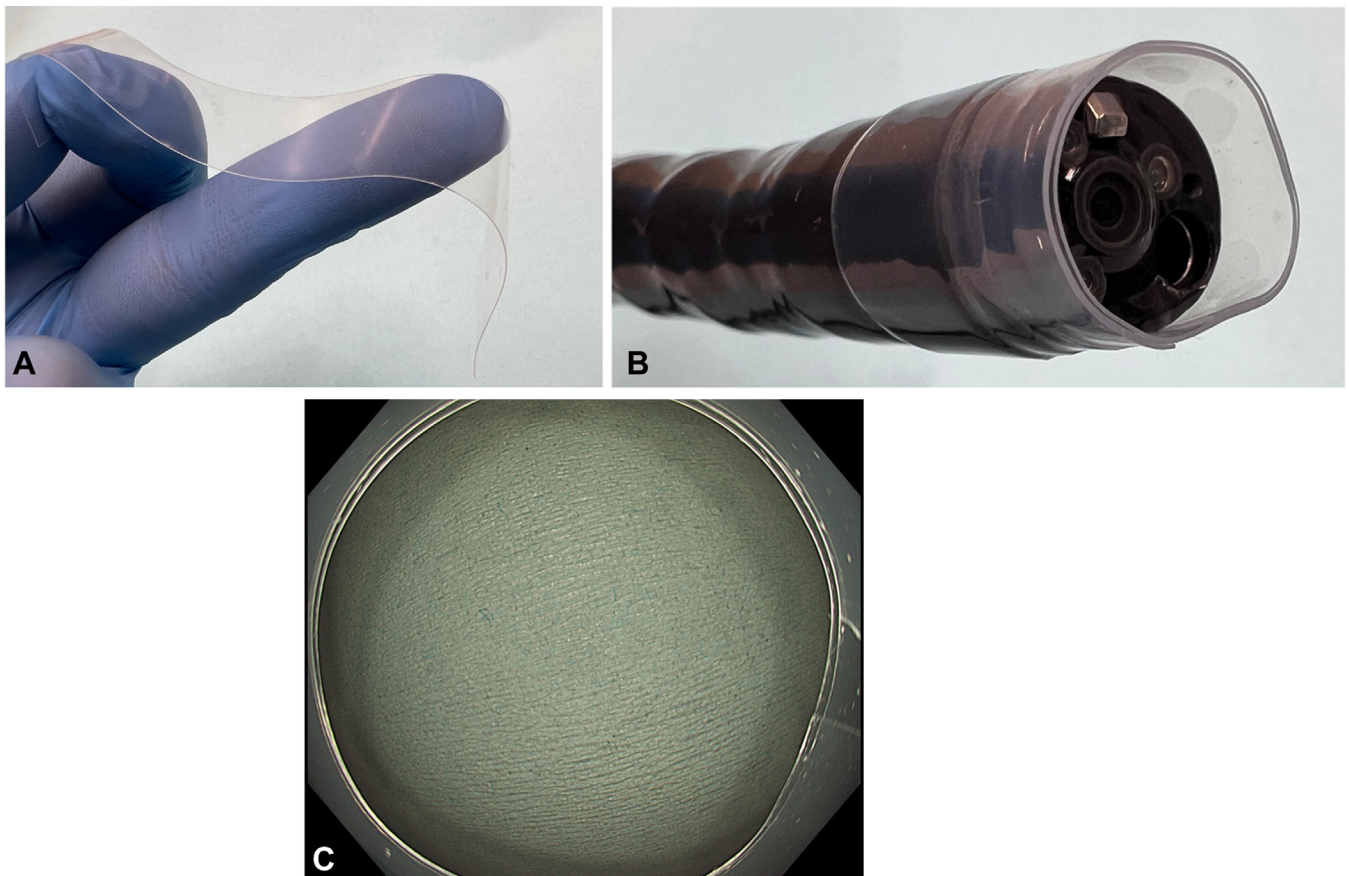




## The usefulness of a newly invented transparent silicon attachment: static electricity fastening tape hood

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**Figure 1.** Static electricity fastening tape hood. **A**, Flexibility of the tape hood. **B**, Exterior of the tape hood. **C**, Interior of the tape hood.

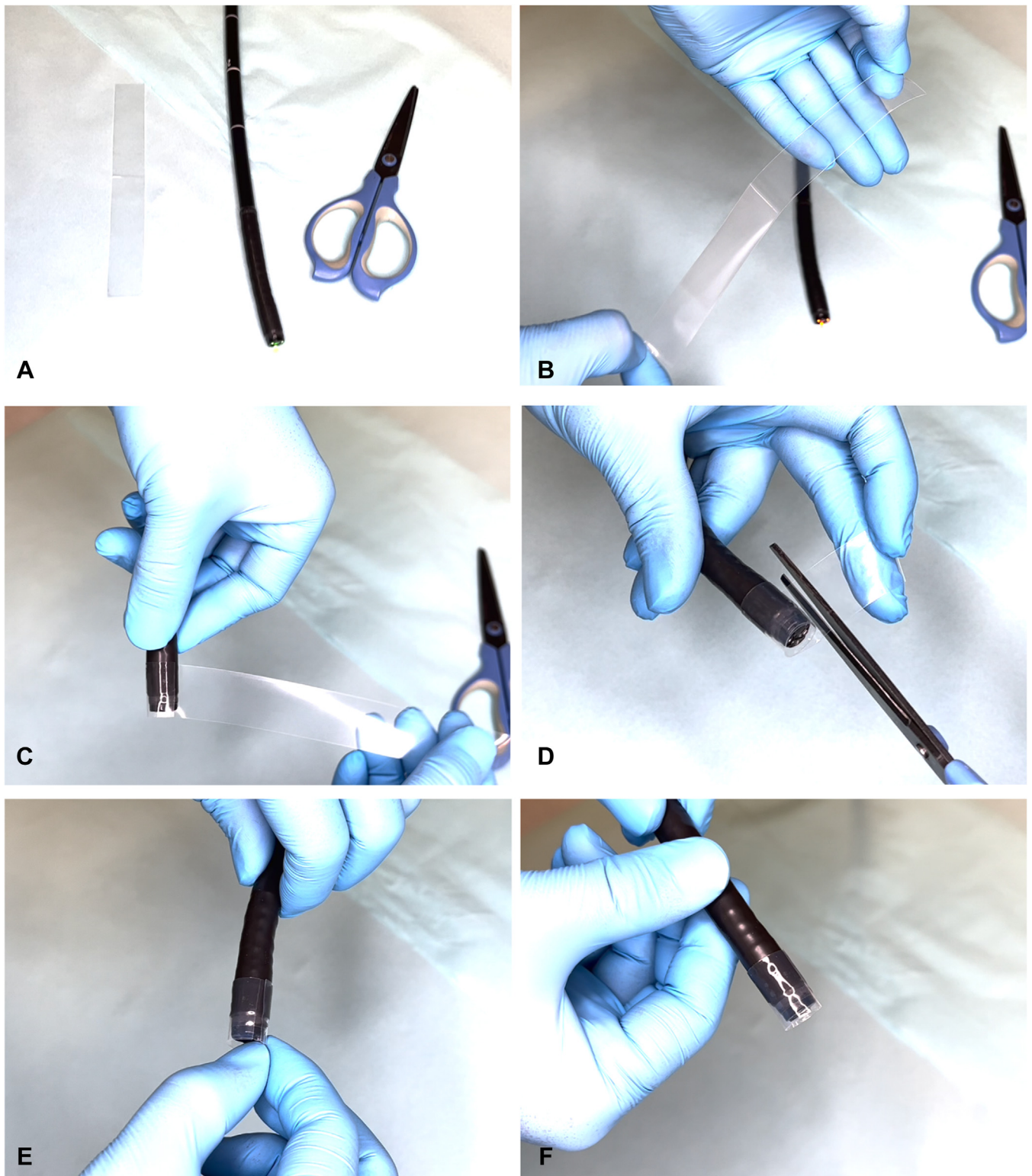
Distal attachments placed on the endoscope tip are useful for cecal intubation of the colonoscope, detecting the polyps

*Abbreviation: SET, static electricity fastening tape.*

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by depressing the fold.<sup>1</sup> Various diameter endoscopes need multiple types of attachments, which is costly. Although some reusable distal attachments are available and inexpensive, disposable attachments are preferable for bacterial contamination.<sup>2</sup> We reported the usefulness of a handmade distal endoscope attachment with transparent tape, which is inexpensive, available worldwide, and compatible with any endoscope.<sup>3</sup> However, polyvinyl chloride, the material of transparent tape, and that adhesive are not guaranteed to be reliably safe in vivo. Therefore, we developed a new tape attachment made of silicon widely used in medicine without adhesive (Fig. 1). This tape adheres to the endoscope because of static electricity. It can be reapplied as



**Figure 2.** The process of making the tape hood. **A**, Prepare the tape hood, scissors, and endoscope. **B**, Peel off both sides. **C**, Wrap the tape around the endoscope 2 or 3 times, adjusting the tape's length visible from the endoscope's tip. **D**, Cut the excess tape with scissors. **E**, Shape the tape hood with fingers. **F**, The tape hood is complete.

often as needed. In addition, this new attachment is low cost. It can be used in low-income countries, has adjustable tip length and stiffness according to the times the tape is rolled,

and is compatible with any endoscope, including ultra-thin endoscopes. Moreover, eliminating the need to make hand-made attachments saves time. Herein, we present a newly

invented transparent silicon attachment, the static electricity fastening tape (SET) hood, and introduce its usefulness for various endoscopic procedures (Video 1, available online at [www.videogie.org](http://www.videogie.org)). This study was approved by the ethics committee of NTT Medical Center Tokyo (ID: 19-72).

Attaching the tape to the endoscope is demonstrated in Figure 2. First, both sides are peeled off. Then, the tape is wrapped around the endoscope, adjusting the tape's length visible from the endoscope's tip. Two or 3 rolls of tape are sufficient in terms of firmness. Finally, the excess tape is cut with scissors.

We evaluated the durability of this tape in vitro. The tape hood did not peel off when exposed to water from the tap, shaken in the water, subjected to strong water currents, or pulled with a pean.

## CASE

A 46-year-old woman underwent a colonoscopy with a tape hood for cancer screening. As for intubation, the tape hood maintains a constant distance from the mucosa, allowing the innominate groove and fold to be seen and making it easy to recognize the direction of the next lumen. As for observation, the tape hood has good firmness for pressing the mucosa to detect, magnify, and resect the polyp. The tape hood did not cause adverse events such as perforation or injury, nor did it peel off in vivo.

This hood is less expensive than a transparent hood and can be attached to endoscopes of various diameters, making it cost effective. However, when the tip length

exceeds 5 mm, the tape bends and becomes less rigid when pressing down on the mucosa. In addition, it has yet to be used for many procedures, such as double-balloon endoscopy, and further verification is needed.

In conclusion, the SET hood is safe, compatible with endoscopes of any outer diameters, and does not peel off easily. In addition, the length of the tape hood can be modified to suit each operator's needs. This video demonstrates the usefulness of the tape hood, which can help to complete several endoscopic procedures.

## DISCLOSURE

*The authors did not disclose any financial relationships.*

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