



DEN Video Article

Shielding method for the endoscopic procedures during the COVID-19 pandemic

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BRIEF EXPLANATION

DURING THE COVID-19 pandemic, infection for medical staff is a serious problem. At present, various safety measures have been reported, but most of them have problems such as the necessity for special equipment, the necessity for disinfection, and the influence on the maneuverability of the endoscope.^{1,2}

We reported a new safety measure for the endoscopic procedures (New STEP) to prevent droplet and aerosol infection by shielding the patients.³ In the original version, the condom was used. To strengthen and simplify this safety measure, we modified it to use Valsamouth (Sumitomo Bakelite Co., Ltd., Tokyo, Japan) (Fig. 1).

What you need to prepare are a transparent plastic bag (equivalent to 90 L, 100 × 90 cm), Valsamouth (Sumitomo

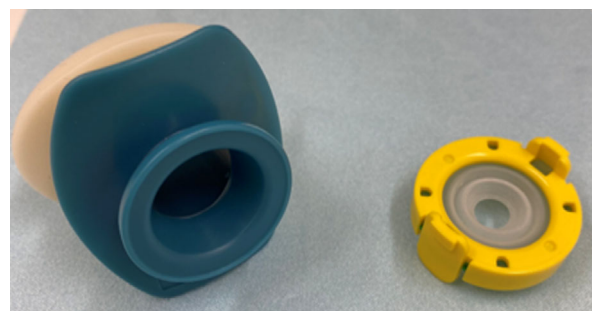


Figure 1 Dedicated mouthpiece used in this safety measure (Valsamouth). A membrane-like valve structure is provided around the endoscope insertion portion to do the Valsalva maneuver. After the Valsalva maneuver, remove the valve and use it as a conventional mouthpiece.

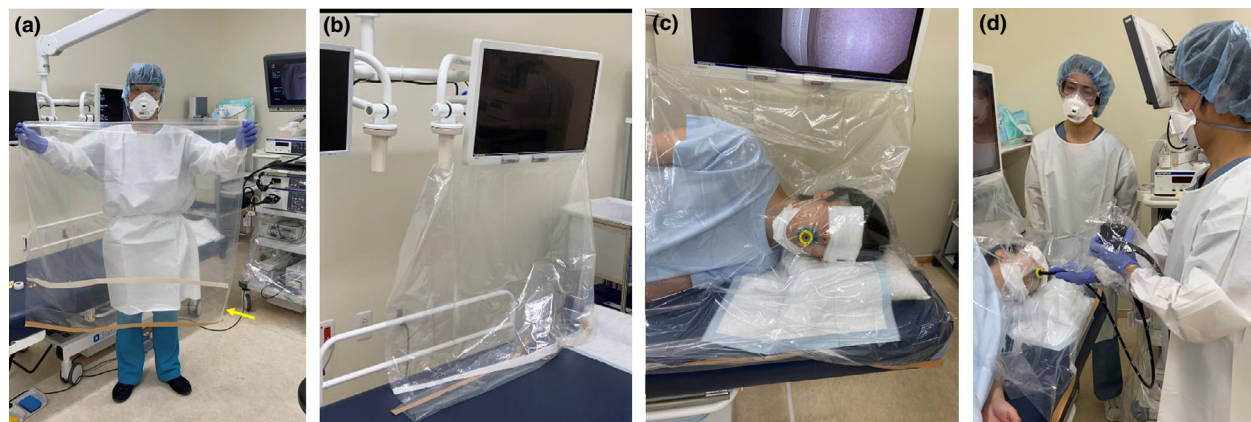


Figure 2 Actual status of the endoscopic examination in our hospital. (a) Before the endoscopic procedure. The edge of the plastic bag is cut off. The side of the endoscopist should be longer (yellow arrow). (b) The plastic bag is attached to the monitor. (c) The patient lays on the examination bed in a left lateral position. The patient places his head inside a hanging plastic bag. Tape the plastic bag to the examination bed. After bite the mouthpiece, attach the membrane-like valve structure to the mouthpiece through the plastic bag. And create an insertion port using 18G needle. (d) The endoscope is inserted through the insertion port and endoscopic procedure is performed as usual. Droplet and aerosol infection can be prevented by membrane-like valve structure and plastic bag.

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Bakelite Co., Ltd.), 18G needle and packaging tape (Fig. 2). The Valsalva is a dedicated mouthpiece for performing the Valsalva maneuver during gastrointestinal endoscopy, and has a detachable membrane-like valve structure.⁴

Before the endoscopic procedure, cut off the edges of plastic bag and attach a plastic bag to the monitor. The patient places their head inside a hanging plastic bag. Tape the plastic bag to the examination bed. After biting the mouthpiece, attach the membrane-like valve structure to the mouthpiece through the plastic bag. Create an insertion port using 18G needle. The endoscope is inserted through the insertion port and endoscopic procedure is performed as usual. During the procedure, oxygen saturation should be monitored. By this safety measure, droplet and aerosol infection can be protected by membrane-like valve structure and plastic bag. Since the shielded plastic bag is fixed to the mouthpiece, it does not interfere with the maneuverability of the endoscope. In the next step, we will measure the aerosols during the various endoscopic procedures and evaluate the utility of this safety measure.⁵

All authors declare that they have no conflict of interest.

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SUPPORTING INFORMATION

ADDITIONAL SUPPORTING INFORMATION may be found in the online version of this article at the publisher's web site.

Video S1 This video shows the actual status of the endoscopic examination in our hospital.