A novel through-the-scope twin endoclip for a large mucosal closure in a live pig model

A novel through-the-scope twin endoclip (TTS-TC) has been developed by our team. The TTS-TC can be delivered directly through an endoscope working channel of 3.2 mm in diameter and contributes to the closure of large mucosal wounds.

A living pig (Feed Research Institute, Guangzhou City, China) weighing 30.5 kg was used to conduct the experiment in vivo. A QF-260J gastroscope (Olympus, Tokyo, Japan) was used. TTS-TC was used to reduce the size of the mucosal wound after endoscopic submucosal dissection (ESD) (▶ Video 1).

The operation steps were as follows. First, the TTS-TC was delivered to the site of the ESD wound through the endoscope working channel (▶ Fig. 1a). The clip on one side of TTS-TC was opened by operating the handle of the TTS-TC system, followed by tight clamping of mucosal tissue on one side of the wound (▶ Fig. 1b). Then, the clamped tissue was pulled toward the opposite side of the wound (▶ Fig. 1c), and the second clip on the TTS-TC was opened to clamp the mucosal tissue on this side of wound (▶ Fig. 1d). After the two sides of the wound had been clamped together, the TTS-TC was released and the wound was closed (▶ Fig. 1e). Using this TTS-TC technique, the large wound on the anterior wall of the greater curvature of the stomach was successfully turned into two smaller wounds. After using a TTS-TC, the wound size decreased, and TTS-TC or traditional through-the-scope clips (TTSC) could subsequently be used to close the wound conveniently.

The size of the wound in the current case was 3.4 × 3.3 cm. The currently available through-the-scope clips can only close a wound of < 2 cm [1], and the over-the-scope-clip requires installation on the outside of the endoscope tip and sometimes the endoscope may need to be reinserted [2, 3]. The TTS-TC device seems to be simple and rapid in operation, and can be used to close a large mucosal wound.

▶ Fig. 1 A large wound after endoscopic submucosal dissection was successfully turned into two smaller wounds by the use of the through-the-scope twin endoclip (TTS-TC). a The TTS-TC was delivered to the site of the wound through the endoscope working channel. b The mucosal tissue on one side of the wound was clamped using the TTS-TC. c The clamped tissue was then pulled across to the opposite side of the wound, and the second TTS-TC was used to clamp the tissue on this side. d, e The mucosae on both sides of the wound were clamped together; the head-end part of the TTS-TC was then released.
Competing interests

None

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Video 1 A novel through-the-scope twin endoclip for closure of a large mucosal wound in a live pig model.