

# **Feasibility of fibrin glue versus endoclips to close the transgastric peritoneal access site in NOTES in a survival porcine study.**

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Publication Date: 2011

## **Abstract:**

Safe peritoneal access and gastric closure are the most important concerns in clinical applications of NOTES. Our past study demonstrated usefulness of the submucosal tunnel technique for safe peritoneal access and closure with endoclips. However, such closure is sometimes difficult and time-consuming. This study investigated the feasibility of fibrin glue for submucosal tunnel closure in a NOTES porcine model. In 10 female pigs each weighing 40 kg, transgastric peritoneoscopy was performed through a 60 mm-long submucosal tunnel created using the endoscopic submucosal dissection technique. After transgastric peritoneoscopy for 30 min, the submucosal tunnel was closed with endoclips in five pigs and fibrin glue in five pigs. After a 7 d follow-up period, the pigs were euthanized for post-mortem examination. Outcome measures included (a) technical feasibility of closure with endoclips versus fibrin glue, (b) clinical monitoring for 7 d, (c) follow-up necropsy at 7 d, and (d) histopathologic examination of the peritoneal access site. Transgastric peritoneoscopy with submucosal tunnel technique was successful in all pigs. Mean time required to close the mucosal incision site with fibrin glue was 1.6 +/- 0.5 versus 19 +/- 18.7 min with endoclips. All pigs survived well without complications. Necropsy revealed no peritonitis. There were no differences in transgastric peritoneal access sites between endoclips and fibrin glue. Histopathologic examination of the submucosal tunnel demonstrated wound healing with transmural fibrosis. No adverse effects from fibrin glue were noted. Compared with endoclips, the application of fibrin glue is easy and simple in the closure of transgastric peritoneal access in NOTES. © 2011 Japan Society for Endoscopic Surgery, Asia Endosurgery Task Force and Blackwell Publishing Asia Pty Ltd.