

Transgastric Endoscopic Cholecystectomy in 2 Dogs

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Introduction : The minimally invasive surgery has the potential to eliminate complications associated with traditional surgery (e.g. postoperative abdominal wall pain, hernias, and wound infection). However, laparoscopic surgery might be the limited procedures in dogs, because of small peritoneal cavity for such a many laparoscopic instruments. The third-generation surgery, NOTES, with the minimal aid of laparoscopy might be the trendsetter of minimally invasive surgery in small animal practice.

Materials and methods : A 3-year-old, 7 kg, male, beagle dog and a 1-year-old, 15 kg, female, mongrel dog were used for the procedure. Single-working channel flexible gastric endoscope was used with the aid of one abdominal laparoscopic port. Gastrotomy was performed using endoscopic needle knife at the ventral antral region. Through the gastric incision endoscope was advanced and retroflexed for the visualization of gallbladder. Cystic duct and artery was ligated using endoclips. After transecting the duct and artery, gallbladder was dissected using endoscopic coagulating grasping forceps and needle knife. Resected gallbladders were retrieved through the mouth and gastric incision sites were sutured using endoclips.

Results : Cholecystectomy was successfully accomplished in both cases. But one dog encountered cardiopulmonary arrest due to multiple diaphragmatic injuries during the procedure, and the other survived. There was no evidence of bile leakage or stomach leakage on postoperative day (POD) 3. On POD 16, gastric endoscopy and laparoscopy was performed. Gastric endoscopy revealed complete adhesion of incision site. The content of the peritoneum appeared healthy, with no sign of infection, bile staining, or organ injury. The omentum was adhered over resected gallbladder fossa and the serosal surface of gastrotomy site.

Clinical relevance : Transgastric endoscopic peritoneal access might be the new route for cholecystectomy in the dog and provides new concept of other minimally invasive intraabdominal surgery in dogs.

Key word : transgastric endoscopic surgery, cholecystectomy, NOTES, dog

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