

## COLONIC OBSTRUCTION FOLLOWING OVARIOHYSTERECTOMY IN RABBITS: 3 CASES

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### Abstract

We evaluated 3 rabbits (8 months to 1.5 years old) for nonspecific clinical signs including hyporexia/anorexia, lethargy, and decreased/absence of fecal output 5 days to 4 months after undergoing ovariectomy (OHE) procedures. Each external physical examination performed on the rabbits revealed decreased gastrointestinal sounds, abdominal pain on palpation, and a caudal abdominal mass. Complete blood counts and biochemical analyses from the rabbits on presentation were within reference values. Abdominal radiographic findings included gas distension of the intestines along with multiple other distended, ingesta-filled loops. Abdominal ultrasonography was performed on all 3 rabbits, and abnormalities included that the colon tapered abruptly at the level of the uterine stump, a mass was seen around the caudal colon, and that the colon was distended. Positive contrast colonograms were performed in 2 of the rabbits. All 3 rabbits initially responded to medical management; however, after a recurrence of abnormal clinical signs, an exploratory laparotomy was performed on each animal. Of the rabbits, 2 had adhesions from the transected uterine body to the small intestine mesentery, resulting in circumferential stenoses. The 2 rabbits with intestinal stenosis were euthanized intraoperatively owing to the poor prognosis for resection and anastomosis of the colon. In one of the rabbits, sutures placed around the uterine stump during the OHE procedure had inadvertently penetrated the colon; the affected area of the colon was resected but the patient died during the postoperative period. Colonic obstruction following OHE is rare for any species, yet 3 cases of this disease presentation in domestic rabbits are presented in this report. In rabbits, clinical signs might mimic functional ileus; therefore, results of additional testing, including abdominal ultrasonography and a radiographic contrast study, are necessary to obtain a definitive diagnosis. Early surgical exploration and correction of the adhesions before irreversible colonic damage is recommended in suspected cases. Copyright 2014 Elsevier Inc. All rights reserved.

**Key words:** colonic obstruction; complications; ileus; ovariectomy; rabbit

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variectomy (OHE) is one of the most common surgical procedures performed on pet rabbits. While generally considered an elective procedure, it has been shown that performing an OHE can significantly reduce the likelihood of uterine adenocarcinoma in rabbits. However, as with any surgical procedure, the OHE is not without potential complications. The purpose of this case series is to review colonic obstruction in 3 rabbit cases post-OHE.

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## CASE 1

An 8-month-old, 2.0-kg, spayed female rabbit was presented to the Veterinary Medical Teaching Hospital at the University of California-Davis School of Veterinary Medicine (Davis, CA USA) with a 5-day history of anorexia and gastrointestinal stasis. The rabbit had an OHE performed 5 days before presentation by the referring veterinarian and was being treated as an outpatient with fluids, metoclopramide (0.5 mg/kg, subcutaneous, every 8 hours, Reglan; UCB, Brussels, Belgium), enrofloxacin (20 mg/kg, orally, every 12 hours, Baytril; Bayer Health Care LLC, Shawnee Mission, KS USA), and syringe feeding (1.5 mL, orally, every 3 hours, Herbivore Critical Care; Oxbow Animal Health, Murdock, NE USA) for anorexia and dehydration. The rabbit's condition initially improved; however, 4 days following the surgical procedure, the animal displayed bruxism and arching of the back, hence tramadol (4 mg/kg, orally, every 8 to 12 hours, Ultram; Janssen Ortho LLC, Gurabo, Puerto Rico) was prescribed for pain management. Although the animal's fecal output was decreased, it was still passing a small amount of formed fecal pellets.

On presentation, the rabbit appeared in good body condition (5/9) but was mildly dehydrated. The gastrointestinal sounds were absent and splinting of the abdominal wall precluded a thorough abdominal palpation. The incision line from the previous surgery appeared to be healing in good order. The remainder of the external physical examination was within normal limits. The rabbit was prescribed buprenorphine (0.03 mg/kg, subcutaneous, every 6 hours, Buprenex; Reckitt Benckiser Healthcare, Berkshire,

UK) and sedated with midazolam (1.2 mg/kg, intramuscular, once; APP Pharmaceuticals, LLC, Schaumburg, IL USA). After the patient was sedated, a blood sample was collected for a complete blood count (CBC) and plasma biochemistry panel with all results within normal limits.<sup>1</sup> Abdominal radiographic images revealed a gastrointestinal tract filled with ingesta, fluid, and gas. The stomach was moderately filled with ingesta and a large, gas-distended segment of the intestine was observed in the right caudoventral abdomen, which was believed to represent the colon or cecum. The appearance of this segment of the intestinal tract with focal gas dilation and an undulating wall was considered abnormal. The intestinal anomaly was thought to be secondary to anorexia and gastrointestinal stasis, but obstruction or displacement could not be ruled out. Multiple small gas bubbles were visualized in the peritoneal space, and there was diminished serosal detail within the abdomen. These findings were considered consistent with a postoperative abdomen, although peritonitis can cause similar radiographic signs. In the thorax, patchy bronchointerstitial pulmonary opacities were identified in the caudodorsal lung region, which the authors thought were inflammatory in nature (Figs. 1 and 2). The rabbit was admitted into the hospital and treatment was initiated with lactated Ringer solution (LRS) (60 mL/kg, subcutaneous, every 12 hours; B. Braun Medical Inc., Irvine, CA USA), meloxicam (0.5 mg/kg, orally, every 12 hours, Metacam; Boehringer Ingelheim Vetmedica,



**FIGURES 1 AND 2.** Right lateral and ventrodorsal radiographic views of an 8-month-old rabbit spayed 5 days before imaging procedure. The gastrointestinal tract is filled with ingesta, fluid, and gas. There is a large, gas-distended segment of intestine in the right caudal abdomen with an undulating wall—presumably the pathologically dilated colon. The site of stenosis is not identifiable. Multiple small gas bubbles are present in the peritoneal space, and there is decreased abdominal serosal detail.



**FIGURES 1 AND 2.** (continued)

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