

Resection of Vaginal Neoplasms by Video-vaginoscopy in Bitches

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ABSTRACT

Background: Vaginal neoplasms usually represent a challenge for veterinary surgeons. Surgical resection often requires episiotomy or even laparotomy and pubic osteotomy, increasing the risk for intra and postoperative complications, such as severe pain, bleeding, wound infection or dehiscence and vaginal stenosis. Endoscopic treatment of neoplastic lesions is routinely used in human patients. However, the information about its use in small animals is sparse. Thus, the aim of the current study was to report two cases of successful vaginoscopic treatment of vaginal neoplasms in bitches.

Case: A female Labrador weighing 26 kg (patient 1) and a mongrel bitch weighing 10 kg (patient 2) were attended due to vaginal bleeding. Physical examination revealed a pedunculated hard nodular mass in the caudal third of the vaginal dorsal floor in patient 1. In patient 2, two nodular, fibrous, infiltrated masses of different dimension were touched on the mucosa of the caudal third of the vagina. The vaginal cytology revealed erythrocytes, cellular debris and anestrus in both cases. Given the clinical suspicion of vaginal neoplasia, the endoscopic approach by vaginoscopy was chosen in order for diagnostic investigation and surgical treatment. Under general anesthesia, a rigid 10-mm telescope with 6-mm working channel was employed for initial examination. A 10-mmHg CO₂ pneumovagina was established using an automatic insufflator. A pedunculated spherical neoplastic mass of approximately 2 cm of diameter was excised from patient 1 using a simultaneous bipolar coagulation and cut forceps, inserted through the working channel of the telescope. In patient 2, the two infiltrated masses were resected using *cup* type biopsy forceps, followed by cauterization of the neoplastic underlining area with bipolar forceps, also through the working channel. The sampled specimen were sent for histopathological examination, which revealed leiomyosarcoma and fibroepithelial hyperplasia in patients 1 and 2, respectively. Moreover, no other therapy was prescribed and the patients convalesced uneventfully.

Discussion: The surgical procedures lasted 23 and 38 min in patients 1 and 2, respectively. Patients recovered uneventfully in the early postoperative period, with no signs of pain. The operative-telescope proved to be versatile and effective for vaginoscopic resection of neoplasms, which was efficient for both diagnostic and therapeutic purposes. The patients presented excellent recovery with minimally invasive surgical trauma, especially compared with conventional techniques. The majority of tumors found in the vagina of dogs are benign, mostly from smooth muscle or fibrous tissue origin (leiomyoma, fibroma and leiomyosarcoma). Surgical excision of the tumor combined with ovariohysterectomy is usually effective to prevent recurrence. After 3 months, patient 1 was submitted to clinical and laboratory tests, including a second look vaginoscopy. Vaginal endoscopic examination revealed only small area of approximately 3 mm scar on the resection site, showing no evidence of recurrence and/or metastasis. Moreover, vaginoscopy was able to avoid the need for episiotomy or laparotomy for resection of the vaginal masses. In conclusion, the resection of vaginal neoplasia by video-vaginoscopy approach was feasible, effective and minimally invasive, which can be an alternative to conventional surgical approaches.

Keywords: endosurgery, vaginoscopy, vaginal tumors, dogs.

INTRODUCTION

Vaginal neoplasms are usually challenging for veterinary surgeons, especially in the small animal setting. Surgical resection often requires episiotomy or even laparotomy and pubic osteotomy, which presents potential for intra and postoperative complications, such as severe pain, bleeding, wound infection, wound dehiscence and vaginal stenosis [2,4,6,9]. Endoscopic treatment of vaginal neoplastic lesions is routinely performed in human patients. However, the information about its use in small animals is sparse [1,3].

The operative telescope is usually employed in the veterinary setting for the accomplishment of single-port laparoscopic-assisted ovariohysterectomy in bitches [7]. However, such versatile instrument was also used for foreign body removal in exotics [8]. Although versatile, the operative telescope is not widely used in the veterinary setting and little information is found in the current literature.

Thus, the aim of this study was to report the cases of vaginoscopic treatment of vaginal neoplasms in two bitches.

CASE

A female Labrador weighing 26 kg and aging 5 years old (patient 1) and a mongrel bitch weighing 10 kg without precise aging data (patient 2) were referred to the Section of Obstetrics and Animal Reproduction of the Veterinary Teaching Hospital of the São Paulo State University (FCAV/UNESP – Jaboticabal) due to vaginal bleeding. Both patients were not spayed. Physical examination revealed a pedunculated nodular mass in the caudal third of the vaginal dorsal floor in patient 1. In patient 2, two nodular, fibrous, infiltrated masses of different dimension were touched on the mucosa of the caudal third of the vaginal. Vaginal smear revealed erythrocytes, cellular debris and anestrus in both cases.

Given the clinical suspicion of vaginal neoplasia, the vaginoscopic approach was chosen in order to aid in the diagnosis and surgical treatment. Following basic pre-operative blood tests, thoracic radiography, abdominal ultrasound and fastening, the patients underwent general anesthesia using propofol¹ 6 mg/kg (IV) and were maintained on isoflurane² vaporized in 100% oxygen in a semi-closed circuit, following endotracheal intubation. The patients were positioned

in right lateral recumbency and the vagina and vulva were aseptically prepared using 20 mL/kg 0,5% PVP-I rinsing solution in normal saline.

A 10-mm telescope³ with a 6-mm working channel was inserted into the vaginal canal for initial examination. The CO₂ cable was connected to the valve of the working channel of the telescope and a 10-mmHg CO₂ pneumovagina was performed using an automatic CO₂ insufflator, for proper dilatation of the vaginal canal and adequate visualization. In patient 1, a pedunculated spherical neoplastic mass of approximately 2 cm in diameter was excised (Figure 1-C and D) using a 42-cm long and 5-mm in diameter bipolar coagulation and cut forceps⁴ (Figure 2-A), which was inserted through the working channel. In patient 2, the infiltrated polypoid masses were resected (Figure 1-A and B) using *cup* type biopsy forceps, followed by cauterization of neoplastic underlining tissues using an autoclavable bipolar forceps, inserted through the working channel (Figure 2-B). In both cases, the vagina was rinsed with normal saline following resection and the excess of fluid was aspirated using an irrigation/suction cannula (Figure 2-B).

The surgical procedures lasted 23 and 38 min for patients 1 and 2, respectively. Patients recovered uneventfully in the early postoperative period, with no signs of pain. In the postoperative period, tramadol chloride (2 mg/kg, SC, TID, for 24 h) and meloxicam (0.2 mg/kg, SC, single dose) was prescribed.

The tissue resected were sampled, placed in buffered 10% formalin and sent for histopathological examination, which revealed leiomyosarcoma and fibroepithelial hyperplasia in patients 1 and 2, respectively. Moreover, no other therapy was prescribed and the patients convalesced uneventfully.

Following 4 months of the surgical procedure, patient 1 returned for follow up and a new vaginoscopic assessment was performed, which revealed only small area of approximately 3 mm scar on the resection site, showing no evidence of recurrence and/or metastasis. The owner of patient 2 was contacted and informed that the bitch had no signs resembling local or diffuse disease since surgery. However, the patient 2 was not submitted no new clinical and vaginoscopic assessment. The owners of both patients were encouraged to submit their animals to surgical spay.

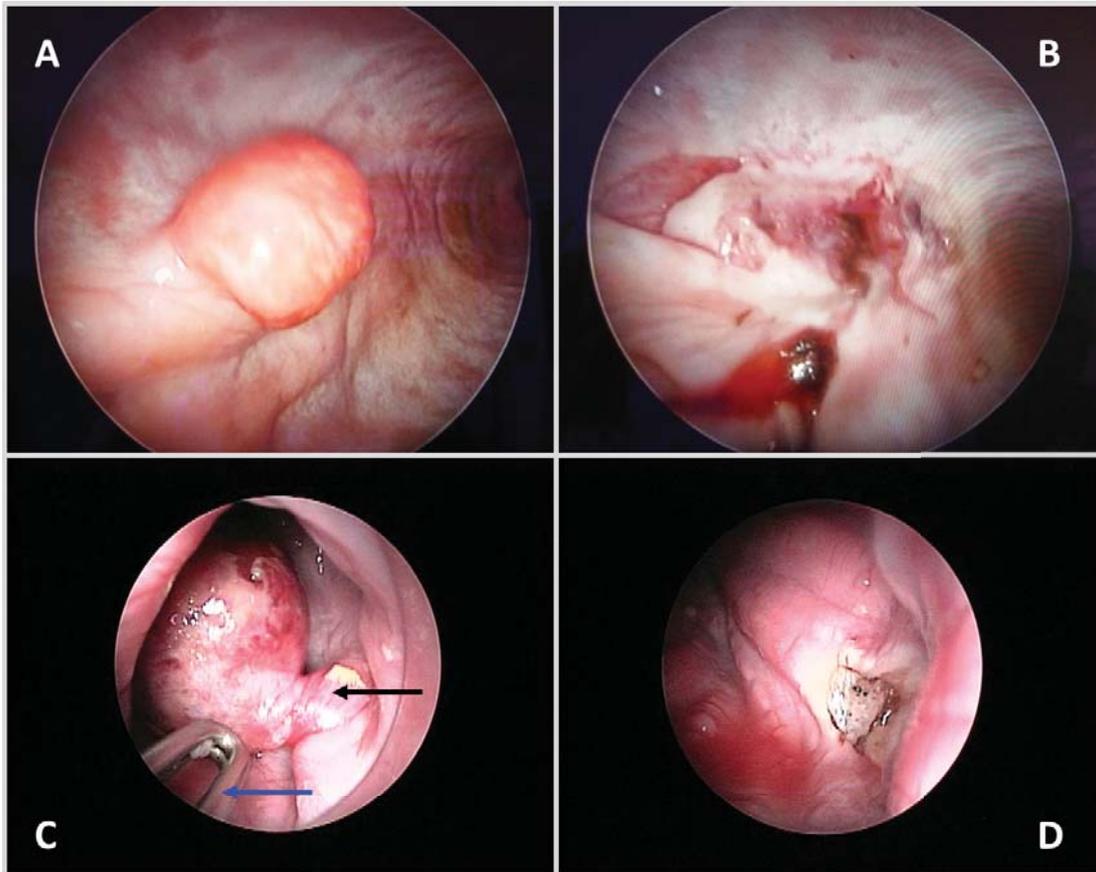


Figure 1. Per-operative view of vaginoscopic resection of vaginal neoplasms in two bitches. In patient 2, one of the polypoid fibrous infiltrated masses is seen after (A) and before (B) resection and bipolar coagulation of the underlining tissue. In patient 1, the pedunculated neoplasm is seen (C): the tumour pedicle (black arrow) and the tip of the bipolar forceps (blue arrow) are highlighted. The vaginal mucosa following resection of the pedunculated neoplasm, showing its pale aspect after coagulation (D).



Figure 2. Long 42-cm of reach and 5-mm diameter laparoscopic instrument used for vaginoscopic resection of vaginal neoplasms in bitches. (A) In patient 1, an automatic bipolar coagulation and cut forceps (Lina Tripol Powerblade™) was used through the 6-mm working channel of the 10-mm telescope. (B) In patient 2, an autoclavable instrument set was used. From the top to the bottom of the picture: suction/irrigation cannula; bipolar coagulation forceps; cop type biopsy forceps; Metzenbaum scissors; Babcock atraumatic grasping forceps; 10-mm telescope with 6-mm working channel; disposable trocar sheath; disposable trocar obturator.

DISCUSSION

Vaginoscopy is usually employed in the small animal routine for transcervical artificial insemination, complementary diagnosis of the phases of oestral cycle, vaginal bleeding, diagnosis of vaginal disease and biopsy sampling [1,3]. Interventional vaginoscopy is rarely used in veterinary patients due to the limited work space, lack of experience by surgeons and cost of implementation of the service of endoscopy. However, in the present case reports, vaginoscopy was easily accomplished and avoided the need for invasive episiotomy approach.

The rigid endoscope with working channel proved to be both versatile and efficient for vaginoscopic resection of neoplasms. The use of video-vaginoscopy was efficient for both diagnostic and therapeutic approaches. Moreover, the configuration of such telescope with working channel allows for the insertion of long laparoscopic instruments, which remain in the center of the field of view during the whole procedure. Such aspect turns the procedure feasible and easily conducted even by inexperienced surgeons. In a study involving the learning curve of single-port laparoscopic-assisted ovariohysterectomy in bitches [7], the authors found that about 20 procedures are required in order to reach the learning curve of such procedure employing the operative telescope. However, vaginoscopy is very simpler than laparoscopic ovariohysterectomy and small animal clinicians and surgeons should be encouraged to use such a helpful and versatile tool.

The most common tumors found in the vulva of dogs are benign (leiomyoma, fibroma), mostly from smooth muscle or fibrous tissue origin. Benign smooth muscle tumours account for 80-90% of vaginal and vulvar tumours in the dog [5]. Surgical excision

combined with ovariohysterectomy usually is effective in preventing recurrence [2,8]. Leiomyosarcoma is the most common malignant tumour of the vagina and vulva in the bitch. Although reported in patients bearing vaginal leiomyosarcoma, distant metastasis are rare and resection with wide margins is the treatment of choice [5]. In the follow up period, none of the patients of the current report presented signs resembling complications of metastasis.

The most important aspect of the current case report concerns about the minimally invasive role of interventional vaginoscopy. Vaginal tumours are usually treated by episiotomy approach and/or conventional ovariohysterectomy [5], which can lead to mild to severe complications, such as pain, dehiscence, infection and hemorrhage [6]. In the present cases, none of those potential complications were found and the patients presented optimal recovery with minimal surgical trauma as stated by others [1,3], in opposition to the results obtained using other conventional techniques [3,6]. Moreover, vaginoscopy was able to avoid the need for episiotomy or laparotomy for resection of the vaginal masses.

In conclusion, the resection of vaginal neoplasia by video-vaginoscopy approach was feasible, effective and minimally invasive, which can be an alternative to conventional surgical approaches.

SOURCES AND MANUFACTURERS

¹Propofol™ Cristalia, São Paulo, SP, Brazil.

²Isoflurano™ Cristalia, São Paulo, SP, Brazil.

³Operative telescope™, H. Strattner/Karl Storz, São Paulo, SP, Brazil.

⁴Lina Tripol PowerBlade™, WEM & Vivamed, Ribeirão Preto, SP, Brazil.

Declaration of interest. The authors report no conflicts of interest. The authors alone are responsible for the content and writing of the paper.

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