

PYONEPHROSIS FOLLOWING OVARIOHYSTERECTOMY IN A BITCH: CASE REPORT

*(PIONEFROSE APÓS OVARIOHISTERECTOMIA EM UMA CADELA:
RELATO DE CASO)*

*(PIONEFROSIS DESPUES DE OVARIOHISTERECTOMÍA EN UNA PERRA:
RELATO DE UN CASO)*

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SUMMARY

A five-year old cross breed bitch was presented at the Veterinary Hospital “Governador Laudo Natel” with vaginal discharge, dilated abdomen, vomiting and diarrhea. Anamneses revealed that the animal has been submitted to an ovariectomy six months earlier, and to another surgical procedures in order to solve complications from the first surgery. Complementary exams were performed and ultrasonography revealed marked enlargement of the left kidney and displacement to the caudal portion of the abdomen. At surgery, the left kidney and ureter were grossly dilated and an ureteronephrectomy was performed. The dog recovered uneventfully and a year later she was clinically normal and no abnormalities were detected through laboratorial evaluations. Once urological complications are unusual problems of ovariectomy, this report describes a case of pyonephrosis as consequence of this routine surgery in a bitch.

KEYWORDS: Ovariectomy. Complication. Pyonephrosis. Bitch.

RESUMO

Uma cadela de cinco anos de idade, sem raça definida, foi trazida ao hospital veterinário “Governador Laudo Natel” apresentando vômito, diarreia e abdômen distendido. Anamnese revelou que o animal havia sido submetido à ovariectomia seis meses antes, além de outra cirurgia com o intuito de solucionar complicações provenientes da primeira. Exames complementares foram realizados e a ultra-sonografia revelou um aumento exacerbado do rim esquerdo, com presença de líquido, e deslocamento do órgão para a porção caudal do abdômen. Na laparotomia, o rim e ureter esquerdo encontravam-se intensamente dilatados e, por essa razão, foi realizada a ureteronefrectomia. O animal recuperou-se bem e um ano após a cirurgia apresentava-se clinicamente normal e sem alterações nos exames laboratoriais. Considerando que problemas de ordem urológica são raras complicações da ovariectomia, este relato descreve um caso de pionefrose em consequência desta cirurgia de rotina.

PALAVRAS-CHAVE: Ovariectomia. Complicações. Pionefrose. Cadela.

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RESUMEN

Una perra de cinco años fue consultada en el Hospital Veterinario “Governador Laudo Natel” con descarga vaginal, el abdomen dilatado, vomitando y con diarrea. Anamnesis reveló que el animal fue sometido a un ovariectomía seis meses antes, y a otro procedimiento quirúrgico para resolver las complicaciones de la primera cirugía. Exámenes complementarios y ecografía fueron realizados y revelaron marcado agrandamiento del riñón izquierdo y desplazamiento a la porción caudal del abdomen. En la laparotomía, el riñón izquierdo y uretra estaban groseramente dilatados y por eso ureteronefrectomía fue realizada. La perra se recuperó tranquilamente y un año después estaba clínicamente normal y ninguna anomalía fue encontrada en los exámenes del laboratorio. Considerando que complicaciones urológicas son problemas raros de ovario histerectomía, este relato describe un caso de piodisplasia como consecuencia de esta cirugía electiva en una perra.

PALABRAS-CLAVES: Ovariectomía. Complicaciones. Piodisplasia. Perra.

Ovariectomía is one of the most common elective surgical procedures in the bitch and the main indication is to prevent oestrus and unwanted offspring (FOSSUM, 1997). Postoperative complications following ovariectomía have been reported for many years and the frequency of complications has ranged between 12.2% and 31.5% (BERZON, 1979, POLLARI e BONNETT, 1996, POLLARI et al., 1996).

As with many other surgical procedures complications such as anaesthetic problems or wound dehiscence may occur, but are unusual. The most common surgical complications of ovariectomía are haemorrhage of incompletely ligated or ruptured ovarian or uterine vessels, ovarian or uterine granulomas with or without fistulation, recurrent oestrus, vaginal bleeding, intestinal and peritoneal adhesions, urinary incontinence and pyometra of the uterine stump (PEARSON, 1973, MACCOY et al. 1988, JOHNSTON, 1991).

Urological complications have been reported as uncommon and are usually related to inadvertent ligation or transection of part of the urinary tract (EWERS e HOLT, 1992, BRADLEY et al., 2000). A few reports have been published about the accidental ligation of the ureter at the time of surgery, or the involvement of a ureter in adhesions with the vagina leading to ureterovaginal (MACCOY et al., 1988) and vesicovaginal fistula (EWERS and HOLT, 1992, GADELHA et al., 2004), sometimes leading to hydronephrosis, hydronephrosis and urinary incontinence (DE BAERDERMAECKER, 1984, MACCOY et al., 1988, BANKS et al., 1991, LAMB, 1994, NEIGER e LAMB, 2000). Considering that there are not enough data about pyonephrosis as consequence of ovariectomía and that urological complications are unusual problems of this type of surgery, this report describes a case of pyonephrosis following ovariectomía in a bitch.

A five-year old cross breed bitch was referred for investigation of a vaginal discharge, dilated abdomen, vomiting and diarrhea. According to a preliminary case history, the animal had been subjected to two surgical

procedures during a six-month period.

The first surgery was an elective ovariectomía. Two months later the animal presented in oestrus and anorexia. Laparotomy was performed and revealed peritonitis and both ovaries with purulent content. The ovaries were removed and the dog was discharged from the hospital. Associated with these surgical procedures the bitch had been treated with different antibiotics (penicillin, enrofloxacin, ampicillin, cefazolin and cephalexin) for a six months period.

On physical examination, the dog was markedly apathetic, exhibited distention and pain of the abdomen, and had a sanguinopurulent vaginal discharge. The heart rate was 170 beats per minute, respiratory rate 80 breaths per minute and rectal temperature 40.8°C. Abdominal palpation revealed the presence of a ventral mass.

Haematological evaluation revealed a marked leukocytosis ($78.0 \times 10^3/\mu\text{l}$) with a regenerative left shift. Serum chemistry analysis was within normal limits. Urinalysis was unremarkable. Abdominal radiographs showed signs of peritonitis and a ventral mass. Ultrasonography revealed marked enlargement of the left kidney with displacement to the caudal portion of the abdomen. An hypochoic area, suggesting uterine stump pyometra was seen. An excretory urogram/ contrast radiography was not carried out due to financial constraints.

A ventral midline laparotomy was performed. At surgery, peritonitis was confirmed and the left kidney and ureter were grossly dilated (Figure 1). The uterine stump was also dilated and adhered to the vesical trigone, close to the left ureter. Five hundred ml of sanguinopurulent content were aspirated from the kidneys and 5.0 ml of purulent content from the uterine stump. A left ureteronephrectomy was performed and adhesions were removed. The abdomen was lavaged with normal saline and closed by standard procedures in three layers.

After surgery, the dog was treated with metronidazole (Metronidazole, JP Indústria Farmacêutica S/A, 15mg/kg q 12h); ranitidine (Ranidolim, Hipolabor,

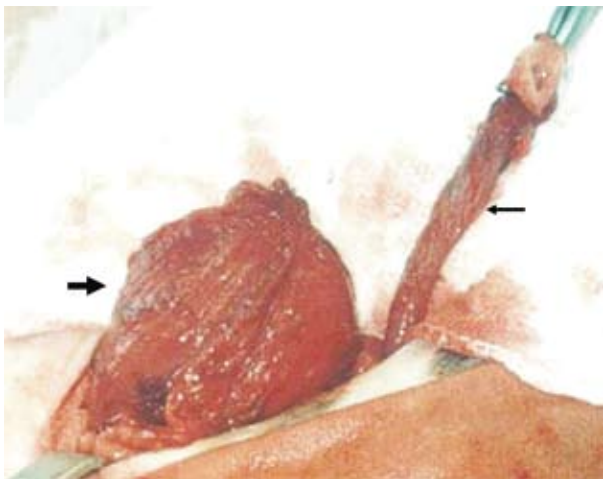


Figure 1 - Large arrow shows enlarged left kidney. Narrow arrow shows a remarkable dilated ureter.

2 mg/kg IV q 8 h); metoclopramide (Cloridrato de metoclopramida, Teuto, 0.2 mg/kg IM q 8 h); amoxicillin (Clamoxyl LA, Pfizer, 22 mg/kg IM q 12 h); meloxicam (Movatec, Boehringer Ingelheim, 0.1 mg/kg IM q 24 h) and with lactated ringer's solution (solução Ringer Lactato, Labormed) at a twice maintenance rate. The dog recovered uneventfully from surgery and was discharged from the hospital after a week when haematological examinations were within normal values. Amoxicillin was carried on for one more week. A year later the dog was admitted to the hospital for general evaluation. The bitch was clinically normal and no abnormalities were detected in the laboratory examinations.

Johnston (1991) affirmed that the incidence of complications after ovariectomy varies with the experience of the surgeon, preoperative patient risk factors such as age, concurrent reproductive diseases and non reproductive diseases including congestive heart failure.

Urological complications are less frequent and have been the subject of a few reports. Some authors have reported complete ligation of one ureter during ovariectomy in the dog causing hydronephrosis (MCEVOY, 1994, KYLES et al, 1996). Fossum (1997) suggested that ureter ligation may be a result from ligation of a dropped or hemorrhaging ovarian pedicle or when the urinary bladder is distended and the trigone and ureterovesical junction are displaced cranially.

In this report, the ureter was not ligated but was adhered to the uterine stump. We believe that this adhesion had caused the obstruction of the ureter, not allowing a normal urine outflow. As a consequence, this unilateral obstruction resulted in dilation of the renal pelvis and ureter with progressive damage leading to hydronephrosis and hydroureter, as has been described by Osborne (1995).

According to Finco (1995) obstruction of the

outflow of urine markedly raises the risk of renal infection via haematogenous or ascending bacteria and has been associated with an increased risk of pyelonephritis. Kidneys with bacterial infection and obstructive uropathy are serious candidates of progressive and irreversible loss of renal parenchyma. In this case, it is hard to point out a single cause for pyonephrosis. The infection may have been started during the second surgery when the surgeon has removed the left ovary with purulent content. This fact associated with obstruction due to the adhesions of the uterine stump and also the presence of a pyometra in that stump may have acted together to develop and progress the infection.

Unilateral ureteral obstruction may remain asymptomatic and only may be detected when hydronephrosis results in a marked increase in kidney size (FINCO, 1995). The bitch in the present case was apparently asymptomatic until four months after the second surgery, when she came for consultation. We believe that during this period, the kidneys were enlarging in size and infection was taking place.

The bitch had no laboratory abnormalities probably due to two reasons. Azotemia is a relatively insensitive index of renal function and the patient may remain nonazotemic with no compromise of the electrolyte homeostasis so long as the contralateral kidney functions normally (FINCO, 1995).

Taking into account that the recovery of glomerular filtration rate is 0% when obstruction lasts 6 or 7 weeks (FINCO, 1995) we decided to perform ureteronephrectomy to prolong life quality.

Thus, as ovariectomy is an habitual surgical procedure worldwide, this report serves to emphasize that care must be taken in dissection and identification of structures in the caudal abdomen in order to avoid any accidental damage of the urinary tract during ovariectomy or surgery for complications that arise therefore.

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