Gossypiboma secondary to ovariohysterectomy in a dog

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ABSTRACT

In veterinary medicine, intra-abdominal foreign bodies are a possible secondary complication of surgical procedures. Gossypiboma is defined as a forgotten textile material after surgery and is considered rare in veterinary medicine because most cases go unreported. The objective of this work is to report the diagnosis of an intra-abdominal gossypiboma in a dog, secondary to the ovariohysterectomy procedure. A 10-year-old Labrador dog had been sterilized about eight years ago. During the clinical analysis, a firm-looking increase in volume was found in the right mesogastric region, without the presence of pain on palpation. For further investigation, the patient was referred for additional imaging tests, such as x-ray and ultrasound. During inspection of the abdominal cavity, a firm circular mass was observed adhered to the omentum and jejunum, caudal to the right kidney. Resection of the mass was performed, and then the mass sample was sent for histopathological examination, which revealed an encapsulated foreign body, consistent with surgical gauze. Gossypiboma is one of the possible complications in surgical procedures in the abdominal cavity, but it is rarely reported in the veterinary literature.

Keywords: Surgical complications; foreign body; ovariohysterectomy; gossypiboma; diagnostic imaging (Source: ICYT de Biología Animal).

RESUMEN

En medicina veterinaria, los cuerpos extraños intraabdominales son una posible complicación secundaria de los procedimientos quirúrgicos. El gossypiboma se define como un material textil olvidado después de una cirugía y se considera raro en medicina veterinaria porque la mayoría de los casos no se reportan. El objetivo de este trabajo es reportar el diagnóstico de un gossypiboma intraabdominal en una perra, secundario al procedimiento de ovariohisterectomía. Una perra, de la raza Labrador de 10 años, había sido esterilizada hace unos ocho años. Durante el análisis clínico se encontró aumento de volumen de aspecto firme en la región mesogástrica derecha, sin presencia de dolor a la palpación. Para una mejor investigación, la paciente fue remitida a pruebas de imagen adicionales, como radiografía y ecografía. Durante la inspección de la cavidad abdominal se observó una masa circular firme adherida al epiplón y yeyuno, caudal al riñón derecho. Se realizó la resección de la masa y luego se envió la muestra de la masa para examen histopatológico, que reveló un cuerpo extraño encapsulado, compatible con gasa quirúrgica. El gossypiboma es una de las posibles complicaciones en los procedimientos quirúrgicos en la cavidad abdominal, pero rara vez se reporta en la literatura veterinaria.

Palabras clave: Complicaciones quirúrgicas; cuerpo extraño; ovariohisterectomía; gossypiboma; diagnóstico por imagen (Fuente: ICYT de Biología Animal).
INTRODUCTION

The presence of intra-abdominal foreign bodies is considered a possible secondary complication of surgical procedures, however, there are few reports in the literature (1). Gossypiboma is defined as a textile material forgotten after a surgical procedure, which is involved in a granulomatous inflammatory reaction (2). The condition is rarely diagnosed in veterinary medicine due to its challenging diagnosis (3).

In human medicine, the detection of foreign bodies after surgical procedures is recurrent, and the vast majority correspond to materials of textile origin (4). Despite of high morbidity and mortality due to fistulas, abscesses, and obstructions. However, these surgical complications have not been highlighted in veterinary literature, probably due to legal reasons (1). Less than 60 cases have been reported, and the vast majority involves a history of previous abdominal surgery (5).

The aim of this report is to describe the diagnosis of an intracavitary gossypiboma in a canine secondary to ovariohysterectomy.

CASE REPORT

A 10-year-old, Labrador, female dog, which had been spayed about eight years ago, was treated at the University Veterinary Hospital of the Federal University of Santa Maria, with a history of convulsive seizures. First, a clinical examination was carried out during palpation of the right mesogastric region and an increase volume firm mass was found, without presence of pain. For a better investigation of the convulsive seizures, the patient was sent for complementary imaging tests, such as radiography and ultrasound.

An abdominal ultrasound examination revealed a heterogeneous structure with a mass in the mesogastric region, at the moment it was not possible to confirm its origin or involvement of the neighboring abdominal organs. A radiographic examination revealed the presence of a soft tissue radiopacity structure, with a spherical shape and approximately 10 cm in diameter, cranial to the urinary bladder. The initial thought was the presence of an intra-abdominal granuloma or neoplasm (Figure 1).

After stabilization of the neurological clinical signs, an exploratory celiotomy was performed with the aim of a definitive diagnosis of the mass and rule out the possibility of a relationship with the clinical signs presented. During the inspection of the abdominal cavity, a firm, circular mass attached to the omentum and jejunum was noted caudal to the right kidney. To remove the mass, a resection end-to-end anastomosis of the affected jejunal portion were performed. The removed sample was placed in 10% formaldehyde and sent for macroscopic and microscopic evaluation. The pathological study revealed that it was an encapsulated foreign body, compatible with surgical gauze (Figure 2).

The patient had a satisfactory recovery after the procedure and did not manifest seizures during the postoperative period while hospitalized, receiving medical discharge after two days. It was not possible to obtain further information about the case.

Figure 1. a) Laterolateral abdominal radiograph view. There is a soft tissue opacity structure with radiopaque areas on the periphery, with a spherical shape, measuring approximately 9.08x8.79x11.0 cm (length x height x width), located in mesogastric region, cranial to the urinary bladder. b e c) Abdominal ultrasound. Heterogeneous hypoechoic abdominal mass with anechoic areas, associated with echogenic to hyperechogenic areas with posterior acoustic shadowing, measuring approximately 8.20x9.00 cm (length x height).
Figure 2. Macroscopic and microscopic examination of encapsulated foreign body after surgical removal. a) Macroscopic image of the mass (11.0 cm x 6.0 cm x 4.0 cm), of firm consistency, when cut, a brownish (necrotic) pasty content is observed, interspersed with a large quantity of small, fibrillar and white-yellowish materials. b) Microscopic image showing a necrotic tissue covered by a fibrous connective tissue capsule. c) In the center of the mass, there is abundant eosinophilic amorphous material, sometimes fibrillar, with cellular debris (necrosis) and occasional. d) Among the areas of necrosis there is the presence of fibrillar and refringent foreign bodies (under polarized light).

DISCUSSION

In veterinary medicine, there are few studies reporting the occurrence of gossypiboma (6). According to human medical literature, different types of materials can be found, however, in 91% of gossypiboma cases, gauze and compresses are found (7), which agrees with the case herein described. The authors refuse the use of gauze in surgical procedures in the abdominal cavity.

The clinical condition of a patient with gossypiboma is quite variable, as it varies according to the patient’s immune status, the body’s reaction to the foreign body and the location of the material (1). Considering the 40 reported cases of gossypiboma removal in dogs, gauze was more commonly left on the abdomen (81%) and after ovariohysterectomy (57%) (8). This is in accordance with the reported case.

The most common clinical signs in dogs with intra-abdominal textile material include skin fistula, palpable mass, vomiting, abdominal pain, weight loss, diarrhea, lethargy, fever, abdominal distension and anorexia (9). The mass can cause compression or be adhered to the organs (6). In the case reported, the patient did not present any clinical sign suggestive of an abdominal mass, but on clinical examination it was palpable, being an incidental finding unrelated to the main complaint.

According to human and veterinary literature, the diagnosis of gossypiboma can be made through complementary imaging tests such as: radiography, ultrasound and computed tomography. Surgical compresses have radiopaque markers, which facilitates their radiographic identification (10), however, in cases where they do not have markers, they can also be identified through ultrasound examination, having variable characteristics according to its composition, being especially reported a mass formation associated with areas of posterior acoustic shadowing (11). In the patient reported, a radiographic and ultrasound examination was performed, in which the changes were suggestive of granuloma or intra-abdominal tumor mass.

The most indicated treatment in cases of gossypiboma is celiotomy for surgical excision of the mass (12). However, with the advent of minimally invasive surgery, some cases have been allowed to be approached in this way, both for diagnosis and treatment (13). In this case, the mass was larger than what could be removed using minimally invasive equipment, so exploratory celiotomy was performed and, subsequently, enterectomy and anastomosis of the adhered intestinal portion.

It is concluded that gossypiboma is one of the complications in surgical procedures in the abdominal cavity, but it is rare reported in the veterinary literature.

Conflict of interests

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Author contribution

All authors contributed equally to the preparation of the manuscript.
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