

OCCURRENCE OF BILATERAL OVARIAN TERATOMA IN BUFFALO – CASE REPORT

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RESUMO: O caso se refere a um estudo que avaliou n = 615 trato genital de fêmeas de búfalos abatidos num matadouro na cidade de Belém, Estado do Pará, Brasil, onde um caso de teratoma ovariano bilateral foi encontrado o que correspondeu a 0,16% de ocorrência de patologias totais. O teratoma é um tumor de células germinativas de ocorrência frequente em animais domésticos, porém raro em bubalinos. Macroscopicamente, o tumor de ovário bilateral mostrou duas estruturas medindo 10 x 10 x 10 cm e 9 x 9 x 9 cm para a gonada direita e para a esquerda, respectivamente. Ambos mostraram uma superfície multilobulada de consistência firme que, ao corte mostrou cistos macro no interior do estroma ovários, o qual continha material estranho como cabelo e material de consistência pastosa acinzentada. Na análise histopatológica observou-se a presença de um tecido epitelial escamoso estratificado, glândulas sebáceas e cartilagens, como estruturas representativas do tumor, confirmando o diagnóstico de teratoma em ambos ovários.

Palavras-chave: Amazônia, búfalo, neoplasia ovariana, teratoma, tumor

OCORRÊNCIA BILATERAL DE TERATOMA OVARIANO EM BÚFALA; DESCRIÇÃO DE UM CASO

ABSTRACT: The case is referring to a study that evaluated n=615 genital tracts of female buffaloes slaughtered in an abattoir in Belem city, Para state, Brazil, where one case of bilateral ovarian teratoma was found which corresponded to 0.16% of total pathologies observed. The teratoma is a germ cell tumor of infrequent occurrence in domestic animals. Macroscopically, the bilateral ovarian tumor showed two structures measuring 10 x 10 x 10 cm and 9 x 9 x 9 cm to the right and left, respectively. Both showed a multilobulated surface of firm consistency that when cutting showed macro cysts inside the ovaries stroma, which contained hair and grayish pasty material. In the histopathological analysis it was observed a stratified squamous epithelial tissue, sebaceous glands and cartilage, as representative structures of the tumor, confirming the diagnosis of ovarian teratoma.

Key Words: Amazon, buffaloes, ovarian neoplasm, teratoma, tumour

INTRODUCTION

The primary ovarian neoplasms are uncommon in all domestic species. In cattle and buffaloes are considered rare, and among the ovaries of some species neoplastic processes originates from germ cells, which form abnormal structures as teratomas (FERNANDES, 2004). Through the embryonic formation of the gonads the primitive germ cells migrate to the ovary in early embryonic life, and can present development with benign or malignant gonadal localization (VALE *et al.*, 1984; BASILE *et al.*, 1998) or extra gonadal, which mainly occurs in cattle, sheep, canine, feline, rodents, guinea pig and in man (GRUYS *et al.*, 1976).

Furthermore, teratoma may be composed of tissues derived from the three embryonic germ layers: ectoderm, mesoderm and endoderm (McENTEE, 1990). Although predominate epithelial structures described by OUTWATER *et al.*, (2001) and PEIXOTO *et al.*, (2005), this kind of tumors characterized by a cystic cavity and solid content composed of sebum, hair, teeth, skin, cartilage, bone, skeletal muscle, central nervous and gastrointestinal tissue (MOULTON, 1990; JONES *et al.*, 1997; JUBB; KENNEDY & PALMER, 2007).

According to FERNANDES (2004), the occurrence of teratoma are uncommon in domestic species but has been described in bovine, buffalo, equine, swine and canine and is considered rare in bovine and buffalo female GRUNERT *et al.*, (2005), and in bitches, are generally bilateral and showed an epithelial formation (SFORNA *et al.*, 2003).

On the other hand, LEFEBVRE *et al.*, (2005) reported that teratoma although of rare occurrence are the second most common ovarian tumour in mares however being benign and did not show any hormonal secretory pattern. According to the authors the differential

diagnosis of an increase in non-neoplastic ovarian volume should include: anovulatory follicle, hematoma, abscess, ovarian, and neoplastic conditions: granulosa cell tumor, teratoma, dysgerminoma and lymphosarcoma (McENTEE, 1990; JUBB; KENNEDY and PALMER, 2007). Likewise, in Brazil, rare cases of teratoma have been reported to occur in buffaloes (VALE & OHASHI 1994). This type of ovarian tumor in animals of the species *Bos taurus* is quoted by MOULTON (1990), JONES *et al.* (1997) and JUBB, KENNEDY and PALMER (2007) as unusual, usually unilateral and generally benign and cyst although BASILE & DINIZ (1982) reported a higher incidence of ovarian teratoma in the *Bos indicus* species (VALE *et al.* 1984).

Thus the aim of this paper is to report a rare case of bilateral ovarian teratoma in buffalo raised in Marajó Island, Pará state, Brazil as uncommon pathology in female buffalo ovarian and show the morphological characteristics for differentiating pathologic findings from other diseases that commonly affect the buffalo's ovaries.

MATERIAL AND METHODS

Reproductive tract of female buffaloes of mixed breed grade and unknown age, originated from extensive commercial farms from Marajó Island, were collected in a slaughterhouse located in the city of Belém, Pará state, Brazil. During the inspection of biological material it was observed a case of ovarian pathology, corresponding to bilateral tumour that was sent to the Laboratory of Animal Pathology (LABOPAT), in the Federal Rural University of Amazonia (UFRA), where it was held biometrics, macroscopic examination and descriptive samples for histopathological analysis collected. Ovarian fragments for histological

analysis were fixed in 10% buffered formalin, processed for paraffin embedding technique, and stained with hematoxylin and eosin.

RESULTS AND DISCUSSION

The occurrence of bilateral ovarian teratoma in this study corresponded to 0.16% (1/615) of all buffalo ovaries inspected, less than that found by OHASHI (1982) to evaluate the genital tract of 590 crossbred buffaloes slaughtered in slaughterhouse teratoma found in 0.33% of cases examined, and COSTA (1974) for research changes in the ovaries of zebu cows slaughtered in abattoirs in the State of Goiás and Minas Gerais, where they detected the presence of 3 cases among 1300 cases of teratoma evaluated, corresponding to 0.23% of ovarian pathologies found. However, MOURÃO (2007) analyzed 1000 pieces genitalia of buffaloes slaughtered in a slaughterhouse in the state of Amapá, no record of this pathology. The same result was obtained by Silva (1995) in the study of ovarian and uterine horns of cows not pregnant buffaloes slaughtered in abattoirs in the State of Pará.

Consequently gross examination of the reproductive tract was observed characteristics compatible with bilateral ovarian tumor, with the enlarged ovaries, with the right measuring 10 cm x 10 and 9 x 10 cm left, respectively, both showed multilobulated surface (Figure 1) and a firm consistency. Also it was observed cysts and hair presence of brown coloration in both ovaries, and darkened pasty material (Figure 2). These characteristics are determinants of ovarian teratoma in buffalo cows (VALE and OHASHI, 1994) and zebu cows (BASILE *et al.*, 1998).

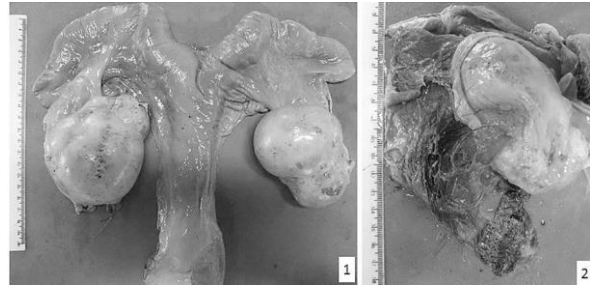


Figure 1: Multilobulated bilateral ovarian teratoma in a nonpregnant buffalo female.

Figura 2: Multilobulated left ovarian teratoma in a nonpregnant buffalo female. Note the presence of hair (1) and pasty material (2).

Therefore, BASILE and DINIZ (1982) commented that the presence of unilateral or bilateral ovarian teratoma whose remaining stroma presents functional structures with concomitant pregnancy in various stages of development suggests that it possibly does not interfere in these reproductive functions. Thus, this study strengthens this reference, it was found that well developed in the corpus luteum of the ovary tumor. To VALE *et al.*, (1984), teratoma is not associated with infertility, since survey of slaughterhouse, the tumor was found in cows in different stages of gestation. Additionally, HÖFLE *et al.* (2004) observed pregnancy in a case of bilateral ovarian teratoma in a free-living Iberian deer.

According McENTEE (1990), in teratomas are present, fabrics for other organ systems, including: remnants of gastric tissue, adrenal, skin, bone and cartilage.

Moreover histologically, the teratoma is classified into mature, immature and malignant components. The mature type or benign is formed of well-differentiated tissue, the immature is derived from somatic embryo cell differentiation, whereas the malignant is characterized by the presence of one or more components malignant germ cell tumors (ISAACS, 1985; TEWARI, 2000). Hence in the present case the histopathological analysis showed adnexal structures of the skin: like hair, sebaceous gland, apocrine areas with

cartilaginous tissue (Figures 3 and 4), and most cysts were lined by stratified squamous epithelium, histological features that allow the diagnosis of mature teratoma (VALE et al. 1984; LEFEBVRE et al., 2005).

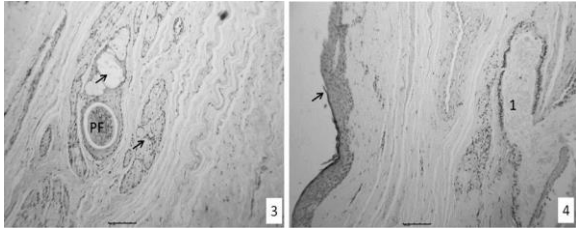


Figure 3. Photomicrography of an ovarian teratoma. Note the absence of ovarian structures to dwell. Presence of sebaceous glands (arrows) and hair follicle (PF). H.E. 10x Objective. bar = 100 µm.

In addition EDWARDS (2002) noted that differ from epidermoid cysts ovarian ovarian teratoma, because they are made up of stratified epithelium, cornified, without showing skin adnexal structures. According to the author, epidermoid cysts and ovarian teratomas appear to have a higher incidence in cattle *Bos indicus* aspect observed also by (VALE et al. 1994).

CONCLUSIONS

In this light it could see the low occurrence of ovarian teratoma in buffaloes and at the lack of clinical reports of this neoplasm in this species, however more studies on the possible interference on reproduction are needed.

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