

Description of a closed pyometra on a wild boar (*Sus scrofa*, Linnaeus 1758)



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Abstract

Pyometra is a pus accumulation in the uterine lumen. This paper reports an unusual case of pyometra in a female *Sus scrofa* of Parque Biológico de Gaia (Avintes, Portugal). The animal was of advanced age, and the clinical signs (e.g., anorexia, lethargy) were originally associated with geriatric conditions. The animal presented a large uterus, which likely further contributed to the locomotion

difficulties and poor body condition. To the extent of our knowledge, this is the first report of a close pyometra in wild boar (*Sus scrofa*, Linnaeus, 1758). However, this diagnosis must be taken into account during uterine evaluation and special attention must be given to its inspection in meat animals.

Key words: *pyometra*; *Sus scrofa*; wild boar; pathology

Introduction

The wild boar (*Sus scrofa*, Linnaeus 1758) is a large ungulate from the family *Suidae*, endemic to Eurasia and North Africa (Temple and Terry, 2007; Harris and Yalden, 2008; Keuling and Leus, 2019). This species is very versatile and adaptable to different environments, with a high breeding rate, an average of 4.5 piglets per litter, although older and heavier females can have up to 10 piglets each gestation (Fonseca and Correia, 2008). Accordingly, wild boar is assessed as being of least concern on the IUCN Red List, including in Portugal (Cabral et al., 2005; IUCN Red List of

Threatened Species, 2014). In North America and Australia, it is considered an invasive species and even has become a pest, causing severe economic losses due to crop destruction (Fonseca and Correia, 2008; Keuling et al., 2013). In many countries, it is also considered a game animal and is hunted for its meat (Fonseca and Correia, 2008).

Case description

The authors describe an unusual case of closed pyometra in an adult female *Sus scrofa* from the zoological collection of

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Parque Biológico de Gaia (PBG) (Avintes, Portugal). The study was conducted in accordance with ethical principles and approved by the institutional ethics committee and ethics committee of the Wildlife Rehabilitation Centre of Parque Biológico de Gaia and from the ICNF (Instituto da Conservação da Natureza e das Florestas). The animal lived in the PBG since an early age after being admitted to the Wildlife Rehabilitation Center of PBG due to road traffic accident that prevented its survival in the wild. During her life at PBG, of almost 13 years, with other wild female and male boars of different ages, she was pregnant a few times, giving birth to healthy litters. However, she was not bred for several years.

Clinical signs included lack of appetite, increased water intake, weakness of the hind legs, fever, lack of energy, and swelling of the abdomen. Because of her advanced age, the difficulties and pain of moving, and the poor body condition, the animal was euthanized.

Post mortem examination was carried out on the day of death, according to the techniques described for mammals and under the appropriate safety and hygiene conditions (Garcés and Pires, 2020).

During external examination, the animal was found to have mucosal congestion and swelling of the joints

due to fibrillation and eburnation of the articular cartilage, particularly in the posterior limbs. The abdominal cavity was dilated, showing ascites and enlargement of the uterus at its opening, occupying more than half of volume of the abdominal cavity (Fig. 1). The uterus wall was thickened, with necrotic, ulcerative and haemorrhagic areas. The lumen of the uterus contained a brownish, viscous and necrotic-purulent exudate. The cervix was closed without gross evidence of tumours or other lesions, and there was no evidence of vaginal discharge. The ovaries did not have a visible follicular cyst, but there was a corpus luteum in the left ovary. The spleen had strong, light foci of capsular fibrosis (Fig. 2). On the cut surface, whitish nodules were seen, due to white pulp hyperplasia. Lymph nodes were enlarged, reddish with lymphoid hyperplasia in medullar areas. Lungs presents heterogeneous coloration with oedema and congestion. Congestive hepatomegaly was seen. No relevant lesions were found in the remaining organs.

Histological examination of the uterus revealed inflammatory infiltration (neutrophils, macrophages and lymphocytes) on the endometrium and myometrium within necrotic areas. Examination of the spleen confirmed white pulp hyperplasia



Figure 1. Uterus after opening the cadaver, dilated and with the accumulation of necrotic brownish material [*Sus scrofa*]

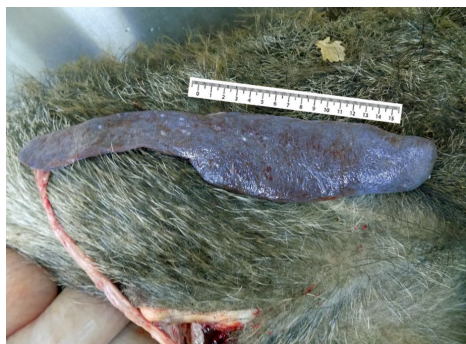


Figure 2. Spleen with pale foci, with capsular fibrosis areas [*Sus scrofa*]

and extramedullary haematopoiesis, also detected in the liver. The lymph nodes presented diffuse and follicular lymphoid hyperplasia with congestion and haemorrhagic areas. Unfortunately, samples of the exudate could not be collected and the infectious agent could not be identified.

Discussion

Pyometra is an inflammation of the uterus with distension of the uterine wall and an increase in uterine volume due to the accumulation of purulent material in the lumen that results of endometriosis or metritis (Maxie, 2015; Zachary, 2016). It can be classified as closed or open according to the condition of the cervix (McCain et al., 2009; Maxie, 2015). This pathological entity can develop without any specific symptoms (e.g., lethargy, fever, anorexia, vomiting, polyuria, and polydipsia), and can be difficult to diagnose, particularly when the cervix is closed and there is no vaginal discharge (Jankowski et al., 2012; Hagman, 2017). It causes discomfort in the animal, not only due to the volume occupied by the uterus, but also by the lesions associated with the infection, such as glomerulonephritis and extramedullary haematopoiesis (Maxie, 2015; Zachary, 2016). These lesions have been observed in many species of

mammals, and are being particularly significant in domestic animals (McCain et al., 2009; Hueffer et al., 2011; Jankowski et al., 2012; Garcês et al., 2019). The colour and consistency of the exudate vary with the etiological agent, such as *Escherichia coli*, *Trueperella Pyogenes*, *Trichomonas foetus*, *Brucella suis*, *Streptococcus*, among others (Maxie, 2015; Zachary, 2016).

In this case, pyometra was a necropsy finding, and the death of the animal was not directly associated with pyometra. There were no specific symptoms associated with the disorder. Poor body condition and increased water intake by the animal were attributed to animal age and the high ambient temperature (summer). Claudication was also attributed to articular lesions, though this may have been due to pyometra.

Moreover, this female had not reproduced in several years, which was attributed to competition with other young females in the same enclosure. Nothing is known on the route of infection, so a previous uterine injury or urinary tract infection that could have led to pyometra cannot be excluded.

Conclusion

To the extent of our knowledge, pyometra has never described in *S. scrofa*, although this lesion has been diagnosed in other species of domestic swine (Ilha et al., 2010; Cypher et al., 2017). Unfortunately, it was not possible to determine the infectious agent, which would be very relevant and could assist in understanding the origin of the infection.

This case is important to better understand the pathology of the genital tract in *S. scrofa* that is often neglected during *post-mortem* examination, particularly in hunted animals.

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Opis zatvorene piometre u divljoj svinji (*Sus scrofa*, Linnaeus 1758.)

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Piometra je akumulacija gnoja u lumenu maternice. U ovom radu, autori su opisali neobičan slučaj piometre u ženke divlje svinje (*Sus scrofa*) iz biološkog parka Parque Biológico de Gaia. (Avintes, Portugal). Životinja je bila već stara, a vidljivi klinički znaci (npr. anoreksija, letargija) izvorno su pripisani gerijatrijskom stanju. Životinja je imala veliku maternicu, koja je vjerojatno doprinijela poteškoćama u kretanju i lošim

stanjem organizma. Prema saznanjima autora, ovo je prvi prikaz slučaja o zatvorenoj piometri u divlje svinje (*Sus scrofa*, Linnaeus, 1758.). Ovu je dijagnozu potrebno uzeti u obzir prilikom procjene maternice i posebnu bi pozornost trebalo posvetiti njezinom ispitivanju u životinja koje se koriste u ishrani ljudi.

Ključne riječi: *piometra, Sus scrofa, divlja svinja, patologija*