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TWO SEPARATE CASES OF EXTRAUTERINE PREGNANCY IN QUEENS

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ABSTRACT

This report describes the reasons for extrauterine pregnancy development, and on the example of two cases of the secondary extrauterine pregnancy in the two different queens possible consequences and factors affecting final outcome of this events are discussed. In the first case, in the four year old, multiparous domestic shorthair queen, two fetuses in different stages of development were found and removed, during a routine spay. According to the history, three months ago she delivered four healthy kittens. There were no complications observed during the delivery. The queen was healthy and did not show any pathological signs since parturition and all kittens were successfully weaned. In the second case also two dead fetuses (one outside and one inside the uterine horn) were found. In this case a few days after an accident significant deterioration of the health status was observed and improvement allows for surgery was achieved after antibiotic therapy.

Keywords: Cats, pregnancy, extrauterine pregnancy

INTRODUCTION

According to the definition of extrauterine pregnancy (EP) (ectopic pregnancy) is the state when the pregnancy develops outside of the uterine body [4]. Regarding localisation, a two types of the extrauterine pregnancy could be recognised: abdominal and oviductal pregnancy. Additionally, this pathological condition, may be divided and classified as primary or secondary [2, 4, 13].

The primary extrauterine pregnancy occurs when, as a result of the wave of the antiperistaltic oviductal contractions, or as a result of oviductal obliteration, a fertilized ovum could not be transferred to the uterus. It may then fall out into the abdominal cavity and attach itself to the peritoneum, omentum, liver, spleen, or onto the outside part of the uterine tube, or the uterine body [7]. The primary ectopic pregnancy usually is not diagnosed in animals. The only exception are rodents and lagomorphs. They have, same as humans, a discoid, hemochorionic placenta, and the

occurrence of EP in these animals is relatively common. The type of placenta presents in the rest of domestic animals, probably makes it impossible to develop the primary extrauterine pregnancy. Segura et al. [21] in their studies on EP in rabbits, described two cases of primary EP, in which the extrauterine placentation was detected. Moreover, Gosden and Russel [8] also reported a case of a spontaneous placentation found in the abdominal cavity of a rat. However Laube [14] who observed embryos in a cat's abdomen, finally concluded that the primary abdominal pregnancy could not be proved on the histological examination.

The oviductal pregnancy is most commonly seen in humans. In animals this type of ectopic pregnancy was only recorded in primate monkeys [12]. The oviductal pregnancy is very unlikely to develop in domestic animals while the physiology of the uterine tube in domestic animals is different in comparison to the humans' [4, 5, 9, 10]. The restricted fluid flow, from the uterine glands to the uterine tubes, may lead to the significant difficulties in creating the appropriate conditions for the development of an embryo [4]. Moore et al. [16] stated that the rabbit's endosalpinx may produce a factor, which prevents the implantation within its area. Similar suggestions were published by Pauerstein et al. [19] who proposed, that this kind of factor might be present in other animals too, and absent in women, which would explain the adverse clinical findings in humans and animals.

In the case of secondary EP, initially, the foetus develops in the uterus, and then gets into the abdominal cavity, through the rupture of the uterine wall, caused usually by a trauma or injury [15]

In most of the reported cases, females carrying foetuses in the abdominal cavity, showed no clinical symptoms and some of them even remain fertile. However, there are also several recorded cases of EP, with subsequent development of pyometra, or with various intensity of clinical symptoms [1, 4, 6, 17]. The main reason for the occurrence of the cases of the extrauterine pregnancy in small animals seems to be the parturition associated with uterine rupture and abnormal uterine anatomy [4]

In the literature there were several reports describing the cases of extrauterine pregnancies in cats [4, 14, 17, 20, 22, 24]. This report focuses on two different cases in the context of different possible consequences and probable factors affecting the development and final effects of this events.

The first case

The four year old, multiparous domestic shorthair queen was brought to Clinic for a routine spay. According to the history, three months ago she delivered four healthy kittens. There were no complications observed during the delivery. The queen was otherwise healthy and did not show any pathological signs since parturition. All kittens were successfully weaned.

During general examination in the abdominal cavity two freely moving objects of different size were palpated. The explorative laparotomy was performed and two foetuses in different stages of development were found and removed. The one of them was a fully developed kitten, while the second one presented as a shapeless mass. Both foetuses were covered in foetal membranes. There was no visible rupture of the uterus wall, however the part of the fetal membrane, belonging to the bigger of the foetuses, was attached to the uterus. There was no connection between the second, smaller foetus and the uterus.

The second case

Five year old queen was brought to Clinic two days after she fell out the 4th floor window. Since then the general condition of the queen was pretty good but it suddenly deteriorated significantly. During clinical examination elevated temperature was noted (40,2°C). The queen was depressed, dehydrated, anorexic and she was gradually getting worse. Radiological examination revealed dislocation of the right hip and the presence of two foetuses in abdominal cavity. Subsequently performed ultrasound examination revealed the death both of them. According to the data obtained from fetometry, the duration of pregnancy was estimated at 30-35 day. The female was hospitalised and received intravenous fluids as well as broad spectrum antibiotic (enrofloxacin s.c. 5mg/kg, Enrobiofloxx, Vetoquinol). Within 24 h the general state of the cat improved significantly, and the decision about explorative laparotomy, with probable ovariohysterectomy was taken. During the operation, the moderate amount of free fibrino-purulent abdominal fluid was observed. The first dead foetus has been found in the abdominal cavity. The rupture of the uterus was visible. The second foetus was located inside the same, ruptured horn (Fig. 1). There was no other foetuses or signs of pregnancy in the second horn. In the peritoneal cavity, on the peritoneum, omentum and abdominal organs, a lot of fibrin was present which suggested the peritonitis. The foetuses were removed and the cat underwent the routine ovariohysterectomy. The abdominal cavity was flushed profusely with warm saline and closed routinely. The cat was hospitalised and the postoperative treatment was performed: enrofloxacin 5mg/kg, Enrobiofloxx, Vetoquinol, metronidazol in tabl. 10 mg/kg twice daily and NSAID (meloxicam, 0.3 mg/kg, SC for 2 consecutive days). After surgery cats' health status improved rapidly.

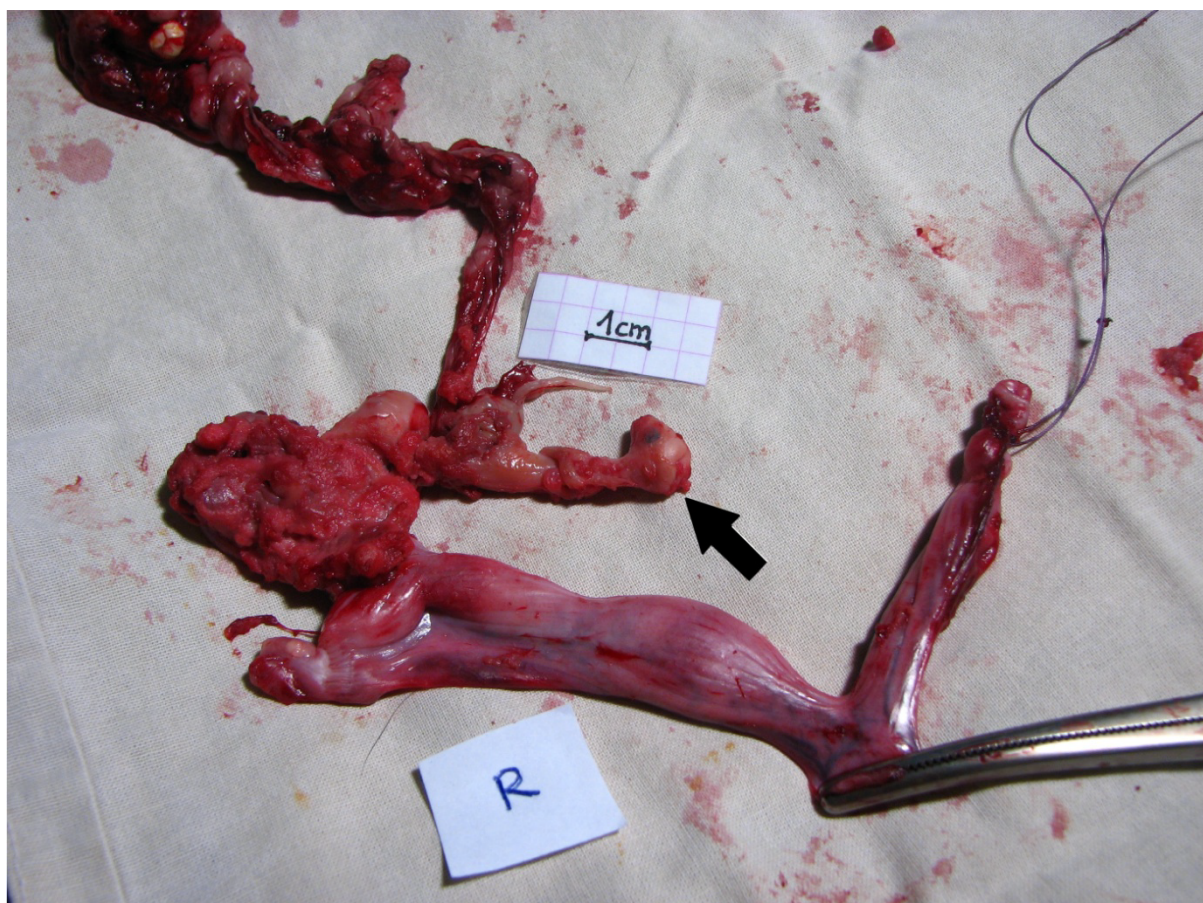


Fig 1. The second case. The fetus outside of the uterine horn.

DISCUSSION AND CONCLUSION

In the first case, considering the fact of advanced, but different stage of the development of the foetuses, it might suggested that it was the case of the secondary type of extrauterine, abdominal pregnancy. Unfortunately, because the queen was multiparous, it cannot be confirmed, to which of her pregnancies, the case of the extrauterine pregnancy, was related. It is presumed that this type of uterine injury might be caused by trauma or occurred during the parturition. Although in some cases the survival of the foetuses was reported, usually the death of the foetus, caused by a serious damage to the placenta is observed [15]. If the rupture of the uterine wall did not cause a significant damage, to the already developed placenta, the further growth of the foetus could be maintained up to its complete development. Rosset et al. [20] also suggested that “the ectopic development of the conceptus secondarily expelled into the peritoneal cavity could be assumed.” In the first presented case that kind of situation could be suspected while the different state of development of both foetuses was observed. It is possible that the bigger foetus, which maintained the connection with the uterus, might have been able to continue its development until it was completed, while the second one, which connection with the uterus and placenta was broken after the rupture, died immediately followed by the processes of aseptic autolysis.

In the second case the direct, underlying reason for the rupture of the uterine wall might be explained by the trauma caused by the fall from the considerable height.

The main difference between both described cases is the general state of the females after the uterine wall damage. In contrast to the first incident, in the second case, followed by the time of good general state of the female after fall, significant deterioration of the general health, was observed. Furthermore quick improvement followed the antibiotic therapy, may suggest the significant influence of the bacterial component in the progression of symptoms. The clearly visible signs of peritonitis found during explorative laparotomy also indicated the role of infection agents in the development of the observed clinical symptoms.

The possibility of presence of bacteria in vagina and in the uterus of the healthy females was described by many authors [3, 11, 23]. Despite the fact that the presence of bacteria in queens’ uterus could be infrequent, it may be concluded, that it was the most probable source of microorganism in the second case, and the underlying cause of the peritonitis. Moreover, as a consequence, it might be the reason for contrasting course of clinical changes, in both females, suffering from ectopic pregnancies caused by the uterine wall rupture.

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