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Case Report

DYSTOCIA IN A FREE-LIVING ROE DEER FEMALE *(CAPREOLUS CAPREOLUS)*

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Summary: A post mortem examination was preformed on wild female roe deer *(Capreolus capreolus)* that was found in a state of distress and humanely killed. The hind legs of a fawn were protruding through the doe's rectum, indicating perinatal difficulties. Necropsy revealed two female foetuses, one of which had entered the birth canal in an uncommon position with the hind legs forward. This foetus had perforated the wall of uterine horn and rectum with the hind feet, causing gross intra-abdominal trauma and haemorrhage.

Key words: reproduction – pathology; pregnancy, animal; dystocia; uterine rupture – etiology; deer; female

Introduction

Dystocia is defined as any arduous parturition that is abnormally prolonged or difficult and is one of the most frequent causes of neonatal mortality (1, 2). Abnormal labour entails a vast number of influencing factors that include both maternal and foetal entities. Neonatal mortality in the livestock industry represents a well-known and important cause of reproductive inefficiency and economic loss (1, 2). On the other hand, very little is known about dystocia in free-living ruminants, since most of the current records are of livestock or farmed cervid species. On the territory of Slovenia the population of roe deer is estimated to be between 80.000 to 85.000 animals. However, dystocia that reduces the offspring's viability and/or causes maternal injury is inevitable although perhaps relatively rare in wildlife (3, 4).

Material and methods

In May 2005, an adult roe deer female (Capreolus capreolus) was submitted to the Veterinary faculty of Ljubljana from a hunting area in lower Carniola in the southeast of Slovenia where the doe was humanely killed. The rather emaciated doe, estimated to be 4-5 years old, was found down in a distressed state and was humanely killed by a gunshot to the brain. The animal had been in labor and both hind legs of a fawn were protruding through the doe's rectum along with herniated intestine. The adult carcass was weighed and measured and a post mortem examination was performed following a standard protocol. The entire genital tract was carefully examined.

Results and discussion

The haircoat on the lower back and upper parts of doe's hind limbs was covered with foetal fluid and wet. The exterior parts of the genitals and rectum exhibited severe congestion. A section of the doe's small intestines and foetal hind legs protruded from the doe's rectum. Necropsy revealed no evidence of herniation of organs in abdominal cavity as described in the ewe (5). A dorsolateral rupture was observed in the left uterine horn with a 20 cm longitudinal perforation of the uterine wall close to the cervix. Two female foetuses, weighting 1600 g and 1450 g each, were found inside the uterus. Both were proportionately developed and of regular

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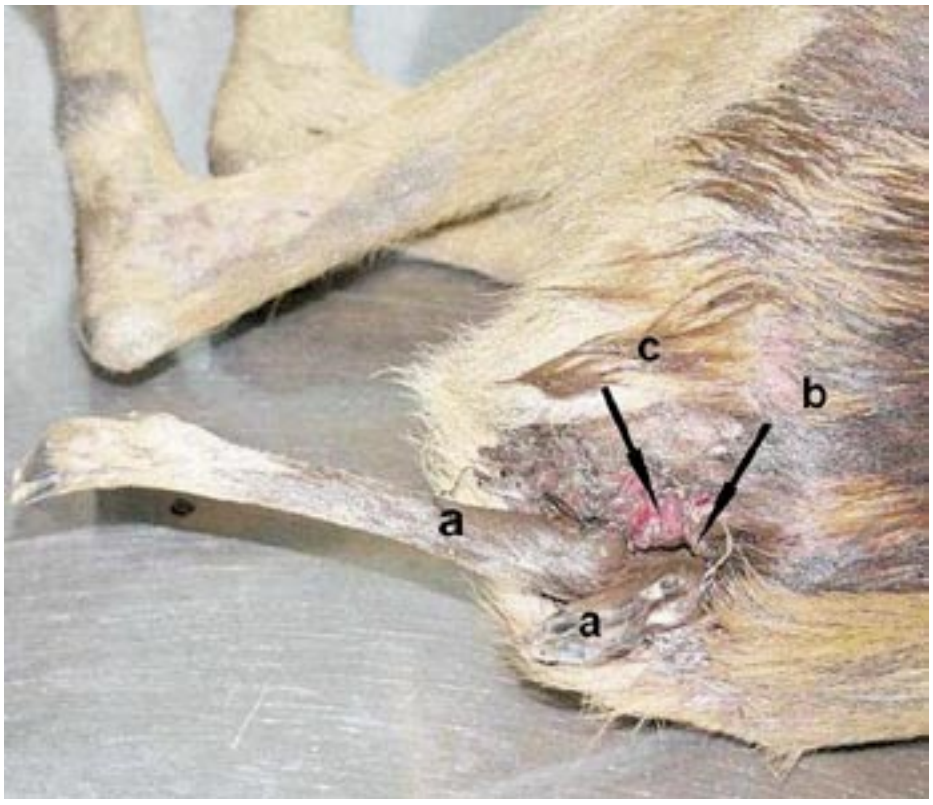

Figure 1: Dystocia. Fawn hind legs (a) protruding through doe's rectum (b). Prolapsed, incarcerated and hyperaemic intestine is also evident (c)

Figure 2: Fawn hind legs entering the rectum. A haemorrhagic margin surrounds the perforation (b) in left uterine horn (a). Through the rupture in the uterine wall, the foetus hind legs (c) perforated and entered the rectum (d) in a caudodorsal direction. Pelvic musculature also exhibits severe hyperaemia

size with regard to late gestation stage. The fetuses entering the birth canal was in an uncommon posterior position with the hind legs presented first. In this position, the foetus perforated the wall of the uterine horn in an attempt to enter the birth canal. Through the rupture in the uterine wall, the fawn's hind legs also perforated and entered the rectum in a caudodorsal direction (Figure 1). The margin of the rupture in the uterine horn surrounding the perforation was hemorrhagic (Figure 2). Pelvic musculature also exhibited severe hyperaemia (Figure 1). Post-mortem examination did not demonstrate a uterine torsion although one may have been present at some time during labour. Uterine torsion frequently leads to stretching of the uterine ligaments and causes circulatory interruptions in the genital tract. Increased tension of the ligaments provokes abdominal pain which may reflect in tenesmus and organ rupture (5). The uterine cervix was closed and undamaged. There was an extensive intra-abdominal hemorrhage. Necropsy identified no other lesions in any internal organs.

The etiology and pathogenesis of uterine rupture in this doe is not clear. It may have occurred unexpectedly and rapidly at the end of gestation. To the authors' knowledge, this is the first report of such event in a wild Roe deer. Evolutionary, dystocia in wildlife is rare as natural selection provides animals with at most possibilities for survival. Such animals, however, are rarely found.

The incidence of dystocia in livestock is closely linked with animal age. In ewes it appears to be rare at first parturition, but most often occurs in older animals that have already had several pregnancies. Repeated pregnancies with multiple foetuses can predispose to dystocia in older ewes and hinds (4, 5). Some authors reported over 0.5% occurrence of dystocia in deer farms (3). In a recent study of farmed elk stillbirths were mostly related to dystocia (4). Dystocias appears mainly in over-fat hinds (5, 6). Similar findings have been reported in domestic animals such as sheep and cattle (1, 2). Dystocia is also one of the most common causes of perinatal mortality in offspring of domestic animals and farmed deer (3). Some authors agree that good body conditioning, obesity, and lack of exercise in farmed deer contributes to fawning difficulties (3, 5). It was estimated that the first 35 days of life are critical period for a fawn to survive and within that interval the highest rate of mortality occurs (7). A report on Roe deer mortality also indicated that the main cause of death in fawns was stillbirth, followed by starvation/hypothermia, drowning, car accidents and falls (7).

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PRIMER DISTOCIJE PRI SRNI *(CAPREOLUS CAPREOLUS)*

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Povzetek: Opravljena je bila patoanatomska preiskava pri odstreljeni srni *(Capreolus capreolus)* v agoniji. Zadnji nogi plodu, ki sta viseli iz rektuma, sta nakazovali obporodne nepravilnosti. Ob raztelesbi sta bila najdena dva ploda ženskega spola, prvi je v porodni kanal vstopil v neobičajni legi z zadnjimi nogami naprej. Plod je na svoji poti iz porodnega kanala s parklji zadnjih nog pretrgal steno materničnega roga in rektuma ter povzročil obsežno intraabdominalno krvavitev.

Ključne besede: reprodukcija – patologija; brejost; distocija; ruptura maternice – etiologija; srnjad, samica