

## Natural superfetation idiopathic abortion in Pasundan cattle

Rini Widyastuti<sup>1,\*</sup>, Rangga Setiawan<sup>1</sup>, Nena Hilmia<sup>1</sup>, Mokhamad Fakhru Ulum<sup>2,†</sup>

<sup>1</sup> Department of Animal Production, Faculty of Husbandry, Universitas Padjadjaran, Sumedang

<sup>2</sup> Division of Reproduction and Obstetrics, School of Veterinary Medicine and Biomedical Sciences, IPB University

**ABSTRACT:** Abortion in cows is a condition in which the foetus is unable to survive until it is born. This paper is the first report of a case of superfetated idiopathic abortion from natural mating that occurred in primiparous Pasundan cows. The cows were initially kept in a colony pen system and mixed between young bulls (n=10) and heifers (n = 18) for two weeks after moving the cows from the livestock pen in Ciamis Regency. Pregnancy occurs because of natural mating in heifers without a known age and pregnancy history. Two months later, a primiparous Pasundan cow was observed to show symptoms of vaginal bleeding and straining, accompanied by the expulsion of a small foetus (length ~ 25 cm, foetal age ~ 120 days) several hours later, and had previously experienced an abortion with a large foetus (length ~ 36 cm, foetal age ~150 days). Primiparous Pasundan cows that experienced abortion were separated into individual pens to reduce stress and for further observation. The therapy given is antibiotics and multivitamins were administered as therapeutic agents.

### Keywords:

abortion, natural superfetation, idiopathic, Pasundan cow, primiparous

### ■ INTRODUCTION

Abortion is a condition of early termination of pregnancy characterised by expulsion of a dead foetus (Hovingh 2009). The prevalence of abortion is still within the normal range of 1-2%, but if it reaches 3-5% further evaluation needs to be carried out to find the cause, treatment and preventive measures (Michael 1993). Abortion events can be caused by infectious microorganisms, such as *Neospora caninum* (Serrano-Martínez *et al.* 2019), or by other non-infectious or idiopathic factors (Ahmed *et al.* 2022), as well as several toxins, such as toxins from *Astragalus* sp. and *Ponderosa* pine needles, and oestrogenic mycotoxins (Buroni *et al.* 2020). Non-infectious factors that cause abortion include metabolic disorders, hormonal disorders, trauma, heat stress, and nutritional deficiencies (Michael 1993). Foot-and-mouth viral infections (Ranjan *et al.* 2016) and genetic disorders have also been reported to cause abortion (Oliver *et al.* 2019).

The incidence of idiopathic abortions of natural superfetation in cows is still very limited. Superfetation incidents were reported in 1918 which was more than a century old (Harman 1918). This article is the first report of idiopathic abortion of a natural superfetal foetus that occurred in a Pasundan cow at the Beef Cattle Teaching Farm, Faculty of Animal Husbandry, Padjadjaran University.

### ■ CASE

**Signalement:** There are 28 Pasundan cattle aged around 18 months (young bulls=10 and heifers=18) at the Beef Cattle Teaching Farm, Faculty of Animal Husbandry, Padjadjaran University, Sumedang Regency, West Java. **Anamnesa:** Cattle originating from Cijeungjing farm, Ciamis Regency,

West Java, was transferred to Beef Cattle Teaching Farm, Faculty of Animal Husbandry, Padjadjaran University, Sumedang Regency, West Java. Pasundan cattle were kept in colonies, mixed with heifers and young bulls for two weeks, and then separated into individual pens. Thus, natural mating may have occurred during rearing. **Clinical Symptoms:** The cow was found to have an abortion two months later, with a large foetus on the floor. Blood discharge was observed on the vulva coming out of the vagina a few hours later, the tail was raised, the mother cow was pushing, and a few moments later, the foetal membranes were visible and the expelled foetus died. The size of the first foetus was estimated to be less than 5 months old, and the second foetus was less than 4 months old (Figure 1). **Diagnosis:** Natural superfetation idiopathic abortion. **Prognosis:** Fausta. **Therapy:** Minimise stress and administer antibiotics and multivitamins.

### ■ RESULTS AND DISCUSSION

The abortion case in this report occurred during the primiparous pregnancy of a Pasundan cow, with a specific cause not yet known. Pregnant cows from natural matings were found to expel dead foetuses on the floor of the pen (Figure 1A). Several hours later, the cows showed signs of restlessness, raised tails, and reddish discharge coming out of the vulva, followed by expulsion of foetal membranes, and finally the foetus came out without any signs. retained placenta (Figure 1B). The first foetus was larger (Figure 1C)

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than the second foetus, with a smaller body size of almost a third (Figure 1D). This condition indicates that the estimated age of pregnancy is less than five months (head-sacrum length ~36 cm) and four months (head-sacrum length ~25 cm). Superfetation occurs in cows with differences in the size of the aborted foetus. This case included cases of idiopathic abortion with an unknown cause.

Superfetation is conception that occurs in a pregnant mother, so that there is a difference in the age of the fetus in the pregnant uterus (Roellig *et al.* 2011). The occurrence of two births with a gap of 96 days between births from a superfetation pregnancy with both fetuses alive has been reported in local Korean cattle (Chang-Yeon *et al.* 2006). More than a century earlier, the incidence of superfetation in dairy cows was also reported, where the birth gap was a month when the first foetus was alive and the second foetus was born dead at an estimated age of less than four months (Harman 1918). Generally, superfetation occurs in animals by the induction of superovulation, superfertilization occurs, and superfetation is formed (Roellig *et al.* 2011). An aborted fetus aged ~120 days has a head-sacrum length of 20-30 cm and weighs around 0.5-1 kg (Mee 2020), while ~150 days has a length of around 31-41 cm and weighs 1.8-2.7 kg. Abortion under 5 months of age is not accompanied by a retained placenta (Anderson 2007). Abortion occurs between 42-260 days of pregnancy. Abortion before 42 days is called embryonal death, while that > 260 days is stillbirth (Hovingh 2009).



Figure 1. Natural superfetation idiopathic abortion in a primiparous Pasundan cow with different foetal sizes. (A) A large foetus was found on the cage floor; (B) the cow was straining, and a foetal was visibly expelled from the vagina; (C) the previously aborted foetus was ~36 cm long; and (D) the second aborted foetus was ~25 cm long.

Confirmation of diagnosis through laboratory tests of maternal serum and feto-placental tissue. Antibiotics and multivitamins can be used for treatment (MLA 2023).

## ■ CONCLUSION

The primiparous Pasundan cow in this report was diagnosed with a natural superfetated idiopathic abortion.

## ■ AUTHOR INFORMATION

### Author for Correspondence

\*RW: r.widyastuti@unpad.ac.id

Laboratory of Reproduction and Artificial Insemination, Department of Animal Production, Faculty of Husbandry, Universitas Padjadjaran. Jl Raya Bandung Sumedang Km 21, Hegamanah, Jatinangor, Sumedang, 45363, West Java of INDONESIA.

†MFU: ulum@apps.ipb.ac.id

Division of Reproduction and Obstetrics, School of Veterinary Medicine and Biomedical Sciences, IPB University. Jln Agatis Kampus IPB Dramaga, Bogor, 16680 West Java of INDONESIA

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