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MANAGEMENT OF DYSTOCIA DUE TO PELVIC TRAUMA IN SOW THROUGH CESAREAN SECTION: A CASE REPORT

Akash Singh[1*], Anushka Pal[1], Nagendra Singh[2], Hanuman P. Yadav[3], Brijesh Kumar Yadav[4] and Anuj Kumar[5]

[1]MVSc Scholar, [2]PhD Scholar, [3,4]Assistant Professor, [5]Professor

[1,2,3,5]Department of Veterinary Gynaecology and Obstetrics,

[4]Veterinary Clinical Complex,

College of Veterinary Science and Animal Husbandry, DUVASU, Mathura- 281001, U.P. India

E-mail: akashdec14@gmail.com (**Corresponding Author*)

Abstract: A four-year-old primiparous non-descript sow was presented to the Veterinary Clinical Complex, DUVASU, Mathura. Its complete gestation period with the history of difficulty in farrowing without any progress in parturition since 48 hrs. Based on the clinical and per-vaginal examinations, the case was diagnosed as dystocia due to pelvic fracture, a narrow pelvic inlet due to previous pelvic fracture, as indicated by callus formation. The case was diagnosed to be dystocia of maternal origin, attributed to narrowing birth canal caused by a healed pelvic fracture. A cesarean section was successfully performed to relieve dystocia. Suturing was performed as per standard surgical methods and postoperative treatment included fluid therapy, antibiotics, non-steroidal anti-inflammatory drugs (NSAIDs), and other supportive treatments for five days. The sow recovered successfully without any complications. This case highlights the importance of recognizing pelvic trauma as a potential cause of dystocia in maternal origin as well as highlights the effectiveness of cesarean section.

Keywords: Sow, Pelvic fracture, Dystocia, Cesarean section.

INTRODUCTION

Dystocia in swine is uncommon, occurring in less than 1% of cases according to estimates. (Cowart, 2007). In swine, normal labor typically lasts between 1 to 5 hours, with around 15 minutes separating the birth of each piglet. If more than an hour passes between the delivery of piglets, it is generally seen as a sign of dystocia (Cowart, 2007). The most reported causes of dystocia in swine are uterine inertia, ineffective or uncoordinated uterine contractions, and fetomaternal disproportion. Additionally, trauma-induced pelvic fractures can lead to a narrowed birth canal, increasing the risk of dystocia (Lozier *et. al*., 2021). The Cesarean section in swine is typically performed in cases of pelvic obstruction due to fetomaternal disproportion (Cowart, 2007 and Callan *et. al.,* 2017). The objective of this cesarean section

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in swine has a satisfactory outcome for survival of the dam and shows effectiveness of cesarean section in such cases.

CASE HISTORY AND OBSERVATION

A four-year-old primiparous non-descript sow was presented in the Veterinary Clinical Complex, DUVASU, Mathura. Its complete gestation period with the history of difficulty in farrowing without progress in parturition since 48 hours. On the general examination the animal was dull and depressed with no straining being observed. The conjunctival mucus membrane was normal, and the rectal temperature was 102.2 ºF. The sow showed all signs of parturition including teats are engorged with milk on stripping colostrum secretion is noticed. Per-vaginal examination revealed a narrow pelvic inlet due to previous pelvic fracture, as indicated by callus formation. Radiography also confirms the presence of multiple fetuses **(Fig.1).** Based on the above findings, the case was diagnosed to be dystocia of maternal origin, attributed to pelvic narrowing caused by a callus formed at pelvic brim.

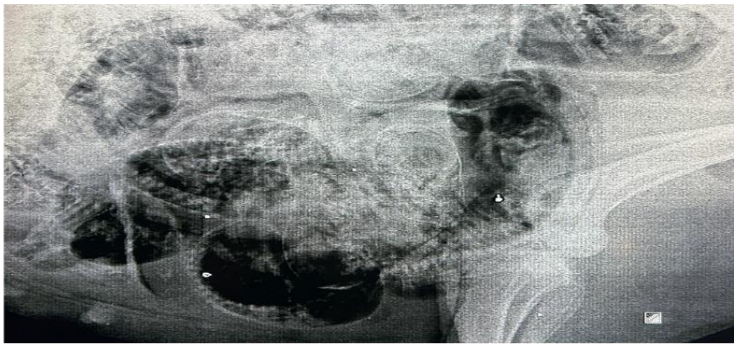

Fig 1: Radiography shows multiple fetuses

TREATMENT AND DISCUSSION

A cesarean section was performed under general anesthesia Atropine sulphate, Xylazine and Ketamine with maintenance of Xylazine and Ketamine (1:1). The animal was placed in the right lateral recumbency, and the upper hind limb of the sow was abducted and extended caudally. A 25 cm to 30 cm area left ventro-lateral was clipped and aseptically prepared **(Fig.2).** An incision measuring 15 to 20 cm was made in the skin, positioned just above and parallel to the testis attachment, starting approximately 10 cm in front of the inguinal area. The incision was extended through the subcutaneous tissue, followed by the external and internal abdominal oblique muscles, as well as the transversus abdominis muscle. The retroperitoneal fat was then dissected, and the peritoneum was carefully opened.

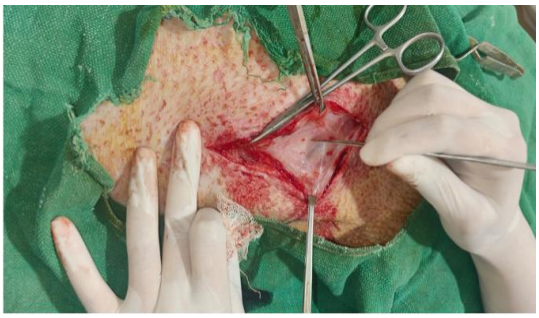

Fig 2: Ventrolateral approach for C-section

Now the uterus is exposed **(Fig. 3)** and incision was made in one of the uterine horns close to the uterine body, and efforts were made to extract all piglets from that horn. However, due to the large number or size of the piglets, the uterus could not be fully exteriorized through the abdominal incision. So additional incision was given on another uterine horn, and piglets were removed to facilitate extraction of the remaining piglets. Following the removal of all piglets **(Fig. 4)**, the entire uterus was carefully palpated once more to confirm that no piglets remained inside. Then uterus was lavage with normal saline and closed with absorbable suture Vicryl no.1 in a cushing followed by lambert suture pattern **(Fig.5)** (Lozier *et. al.*, 2021).

Fig 3: Grossly enlarged gravid uterus

Fig 4: Eight dead emphysematous fetuses

Fig 5: Cushing followed by lambert suture pattern in Uterus

The peritoneum and muscle layers were sutured using Vicryl no. 1 in a simple continuous pattern. Similarly, the subcutaneous tissue was closed with Vicryl no. 1, also employing a

simple continuous suture technique. Skin was opposed with polyamide (Nylus) no.1 in a horizontal mattress suture pattern. Once the incision was closed, the animal regained consciousness from anesthesia. Fluid therapy, antibiotics and NSAID were administered during the surgery. Advised to continue antibiotics, anti-inflammatory and supportive drugs systemically for the next five days.

Large animal surgery and theriogenology resources cite duration of labor as a negative prognostic indicator for cesarean section in swine (Cowart, 2007; Callan *et. al*., 2017; Ko *et. al.,* 1993). Local anesthesia or injectable anesthesia is acceptable anesthetic protocol (Cowart, 2007 and Callan *et. al.,* 2017). In swine cases of cesarean section for the relief of dystocia, sows may be in varying degrees of hypovolumia and shock (Benson, 1986). Friendship et al. (1990) conducted a study in a controlled laboratory environment where cesarean sections were carried out on sows at 113 days of gestation slightly before the typical term of 114 to 115 days (Cowart, 2007) and prior to the initiation of labor. Since the sows had not yet begun labor, dystocia did not occur, which likely played a role in the observed reduction in stillbirth rates. Additionally, the study found that higher parity was associated with lower stillbirth rates, with first-parity gilts showing a stillbirth rate of 21.8% (Jackson, 1975). Surgical methods for performing cesarean sections in swine include ventral midline, paramedian, ventrolateral, and paralumbar fossa approaches (Callan et al., 2017; Baird, 2013). In this case, the ventrolateral approach was chosen. This method provides advantages such as easier access to uterine horns and avoids complications related to the teats (Callan *et. al.,* 2017). No significant surgical complications were observed with this approach during follow-up. The highest risk of postoperative death for the dam was within the first 48 hours (Lozier *et. al.,* 2021).

Conclusion

This cesarean section performed under general anesthesia in swine has good prognosis for dam survival and this case highlights effectiveness of cesarean section in pelvic fracture cases.

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Conflict of Interest

The authors declare no conflicts of interest.

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