

Dystocia due to Monocephalus Conjoined Twin Relieved by Partial Percutaneous Fetotomy in a Sheep – A Case Report

Selladurai Praveen^{1*}, Nithish Kumar², Maharajan Lavanya³

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Conjoined twin monsters are usually monozygotic twins in origin that failed to undergo complete division at the primitive streak stage of the embryo (Noden and Lahunta, 1985). The incidence of congenital defects in embryonic duplications is common in bovines ranging from 1 in 50,000 to 100,000 normal births followed by sheep and goats (Unver and Ozyurtlu, 2007). Anterior duplication is more common than posterior duplication. The etiology of defects in embryonic duplications is attributed to genetic causes, environmental causes and their interactions (Mazzullo *et al.*, 2003; Tripathi and Mehta, 2015). The monsters resulting from congenital defects in embryonic duplications are of clinical concern as they impose a potential threat to dam survivability in addition to fetal loss and associated economic loss to the farmer.

CASE HISTORY AND OBSERVATIONS

A female sheep in her third parity was presented to Veterinary Dispensary, Thiruvengadu, Mayiladuthurai district, Tamil Nadu with a history of full-term gestation period exhibiting restlessness, intermittent straining, copious vaginal discharge and impending parturition for the past 2 hours. The owner also reported that approximately four months before the sheep exhibited PPR like symptoms including oculonasal discharge, mucosal erosions in the gum, lips and soft palate, and diarrhea. Recovery was reported with the administration of antibiotics and fluid therapy in a week. However, almost 80% of her herd mates that were pregnant of about 2-4 months were aborted.

The sheep was found restless and exhibited intermittent straining with heart rate of 85 bpm, respiration rate of 45/min and subnormal temperature (37.8°C) on general clinical examination. Gynaeco-clinical examination revealed that the cervix was completely relaxed and the water bag was ruptured. Further, two fetal hindlimbs and two tails were palpable in the birth canal. Per vaginal examination revealed the fetus in posterior longitudinal presentation, dorsosacral position with both hindlimbs extended in the birth canal. No fetal reflexes were present on examination. Deep intrauterine examination revealed two more hindlimbs found abnormally attached to the pelvis of the same fetus indicating fetal deformity. The fetal head and forelimbs were not palpable.

¹Veterinary Assistant Surgeon, Thiruvengadu, Mayiladuthurai-609114, Tamil Nadu, India.

²Department of Livestock Products Technology, Veterinary College and Research Institute, (TANUVAS) Namakkal-637001, Tamil Nadu, India.

³Veterinary Assistant surgeon, Sirukkulam, Virudhunagar district-626202, Tamil Nadu, India.

Corresponding Author: Selladurai Praveen, Veterinary Assistant Surgeon, Thiruvengadu, Mayiladuthurai-609114, Tamil Nadu, India, e-mail: tanuvaspraveen@gmail.com

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TREATMENT AND DISCUSSION

The ewe was restrained in her standing position and low epidural anesthesia was administered with 2% lignocaine into the lumbosacral space. The external genitalia and perineum were washed and the birth canal was adequately lubricated. The traction was applied on both the hind limbs present in the birth canal and a transverse cut was given through the skin cranial to the head of the left femur using a surgical blade. The dislocated joint was traced using fingers and the ligamentous and tendinous attachments were separated and the hind limb was removed. The other hind limb was also detached similarly. The fetal parts were then pushed inside the uterus by repulsion for creating space for per vaginal manipulation. The fetal head and abnormal four forelimbs were traceable along the trunk of the fetus. The fetus was then rotated inside the uterus and the fetus was brought to the anterior presentation. As the fetus was still large for per vaginal delivery by traction, decapitation was attempted. A snare was applied to the lower jaw of the fetus and traction was applied. The fetal head was secured at the vagina and a transverse cut was given behind the jaw through the skin, trachea, larynx, and esophagus to the cervical vertebra. The head was removed leaving the protruding skin over the vertebra. Traction was applied to the forelimbs and the fetus was successfully relieved. On per vaginal delivery the

monster was found to be a conjoined twin with a single head, four forelimbs, four hindlimbs, two tails, and the trunks were attached at the sternum and thus referred as monocephalus sternopagus tetrabrachius tetrapus dicaudatus (Fig 1).

After delivery of the fetus, the sheep was treated with antibiotic ceftriaxone @ 10 mg/kg body weight and analgesic flunixin meglumine @ 1 mg/kg body weight intravenous infused with Ringers' lactate @ 800 mL/day for three consecutive days and oral administration of uterine ecobol was advised. The fetal membranes got expelled the same day and the animal recovered uneventfully.



Fig. 1: Ovine conjoined twin: Monocephalus sternopagus tetrabrachius tetrapus dicaudatus relieved by partial fetotomy and traction

The present case report describes dystocia due to a congenital monster that arose from a defect in the embryonic duplication of the sheep embryo. These monsters can display a broad range of defects based on the degree of duplication of organs and the site of fusion of the conjoined twins (Dennis, 1975). Though anterior duplications are more common (Pansuriya *et al.*, 2022) the present monster was found to have undergone posterior duplication attached at the sternum ventrally. The etiology in this case can be either a genetic disorder or an environmental agent like a virus etc. Specific pathogens like a Akabane virus have been reported to cause congenital disorders in ruminants (Spiers, 2010). The real cause of the defect could not be ruled out in this case as

the condition could be due to multiple reasons. However, this report emphasizes the importance of choosing fetotomy over Caesarean section with the timely intervention of the case, as it can ensure better dam survivability. Though the preferred method to relieve dystocia may depend on a series of factors (Kumar *et al.*, 1979), if early intervention, compatible size and shape of the monster to pass through the birth canal, proper lubrication of birth canal, technical expertise of the handling obstetrician are ensured partial fetotomy can prove to be a better relieving strategy for fetal monsters arising from defects in embryonic duplications.

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