

## SUCCESSFUL MANAGEMENT OF DYSTOCIA DUE TO FETAL CONGENITAL LIPOMATOSIS, MUSCULAR HYPERTROPHY AND ANASARCA IN A BUFFALO

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### ABSTRACT

Lipomatosis, muscular hypertrophy and anasarca are three different pathological conditions that are occasionally reported in bovine fetuses at the time of parturition. These conditions may or may not cause dystocia depending upon the extent of pathology and complications associated with them. Dystocia occurs if generalized pathology is present in fetus that results in increased fetal size which can cause fetomaternal disproportion and often requires obstetrical intervention upon appropriate diagnosis. The present case report describes dystocia due to multiple fetal pathologies viz. lipomatosis, muscular hypertrophy and anasarca and its successful management through partial fetotomy in a buffalo.

**Keywords:** *Bubalus bubalis*, buffaloes, anasarca, dystocia, fetotomy, lipomatosis, muscular hypertrophy

### INTRODUCTION

Dystocia is defined as difficult or delayed calving which often requires significant human

interventions (Uzamy *et al.*, 2010). Although, it has a lower incidence in buffalo but still has a considerable impact on buffalo production (Kaushik and Mathur, 2005). Incidence of abnormal calvings in case of Murrah buffalo ranges within 5.6 to 12.6% (Khan *et al.*, 2009). Out of fetal and maternal causes of dystocia, former are more common than latter (Wehrend *et al.*, 2002). Lipomas are tumours that may originate from well-differentiated lipocytes and lipoblasts. Neoplasms of adipose tissue rarely occur in buffalo and usually occur singly in a localized manner in the abdominal cavity (Ozmen, 2005) but rarely occur in generalized form. Muscular hypertrophy refers to increase in the size of muscle fibers that cause excessive enlargement of fetus. Also, anasarca in a dropsical condition of tissues characterized by accumulation of fluid under skin (Singh *et al.*, 2007). All these pathological conditions occur separately in most of cases and seldom occur in combination. The combination of three different pathologies in a single fetus make this communication unique in nature. To the best of our knowledge, there is no evidence of combined occurrence of these conditions in the literature. This case report also depicts successful vaginal delivery of such fetus following partial fetotomy.

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## CASE HISTORY AND OBSERVATIONS

A pluriparous Murrah buffalo in its second parity was presented at University Veterinary Clinic with history of straining since last ten hours. The water bags had ruptured five hours ago with only fetal limbs noticeable through vulva without any progression in delivery. Per-vaginal examination revealed hind limbs of fetus in birth canal suggesting posterior longitudinal presentation. Critical examination of fetus was suggestive of some monstrosities resulting in an extremely oversized fetus, thus causing fetomaternal disproportion and dystocia as a sequel. An immediate decision to perform fetotomy operation on the dead fetus was taken to relieve dystocia.

## TREATMENT AND DISCUSSION

In order to save life of the dam, an immediate decision to perform fetotomy under epidural anaesthesia (7 ml, 2% Lignocaine hydrochloride at sacro-coccygeal junction) following lubrication with 1% carboxy methyl cellulose sodium solution was taken. Well lubricated, completely loaded fetotome was introduced in the uterus and cut was given at the level of fetal pelvis including some part of abdomen to amputate right hindlimb so as to reduce the size of fetal hindquarter. As per our expectations, fetotomy cut reduced size of the fetus, sufficient enough to facilitate the delivery. Thus, fetotomy proved fruitful and rest of the fetus was subsequently delivered by moderate traction at left hind limb. After delivery, it was found that fetus was extremely oversized having generalized congenital atrichia, thick skin, enlarged muscules and anasarca (Figure 1). Skin necropsy from

different sites of fetus body was suggestive of lipomatosis (Figure 2). Muscular hypertrophy was also evident upon histopathological examination (Figure 3). Post-obstetrical treatment included fluid therapy, antibiotic, anti-inflammatory and liver tonics to boost appetite for a period of five days along with calcium supplementation to enhance production.

Congenital tumours occur rarely in bovines, however, the cases of lipomatosis are occasionally observed in the abdominal cavity of adult cattle, and they are very seldom in calves (Goldschmidt and Hendrick, 2002). Generalised form of lipomatosis is very uncommon. Necropsy followed by histopathology of samples taken from affected sites is indicative of multiple infiltrative fat globules or lipomas evident upon staining. These generally occur due to a simple, autosomal recessive defects. Prasad *et al.* (2017) have reported a case of dystocia due to fetal lipomatosis in a murrah buffalo. Muscular hypertrophy is another congenital disorder that may have genetic or environmental etiology including viruses and toxins (Leipold *et al.*, 1983). Slides stained for histopathology of hypertrophied muscles display an enlargement of the muscle fibers. A case of dystocia due to muscular hypertrophy in murrah buffalo has been reported by Prabakaran *et al.* (2013). Also, exact cause of anasarca (generalized fetal dropsy) is not known but derangement of fetal circulation or obliteration of fetal lymphatics is thought to be the leading etiology. Anasarca fetuses have been reported to cause dystocia in buffaloes by Prasad and Kishore (2015). In general, line of treatment adopted to deliver such abnormal fetuses is the cesarean section but the post-cesarean complications *viz.* low survival of the dam, development of uterine adhesions, peritonitis and low subsequent fertility are the negative impacts of

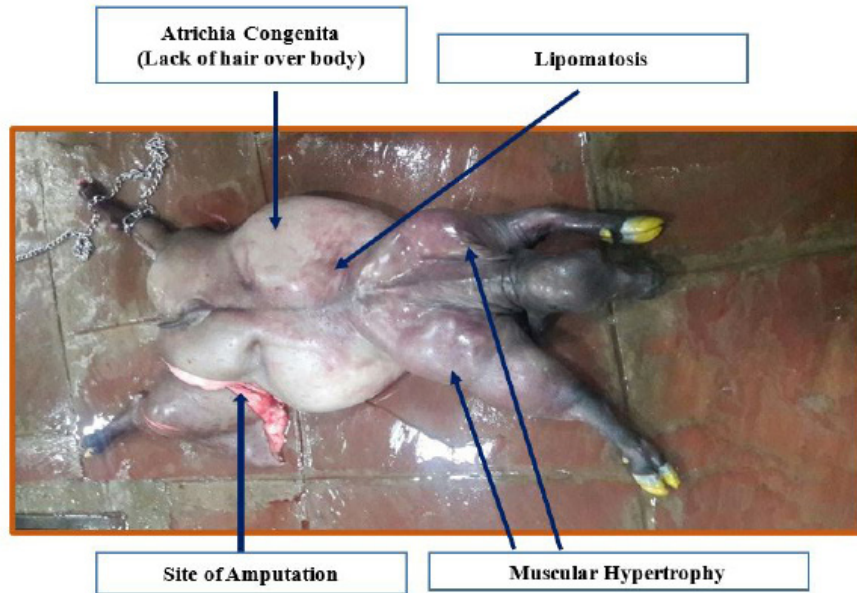


Figure 1. Extremely oversized fetus having congenital atrichia, lipomatosis, muscular hypertrophy and anasarca condition.

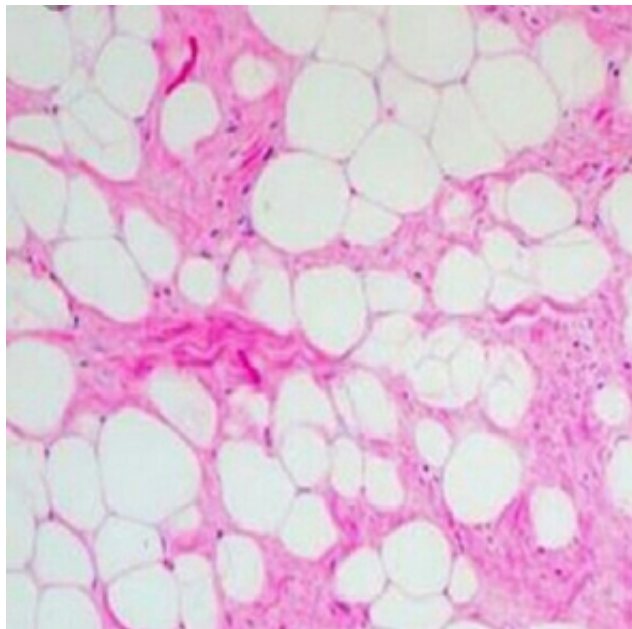


Figure 2. Histopathology staining suggestive of Lipomatosis.

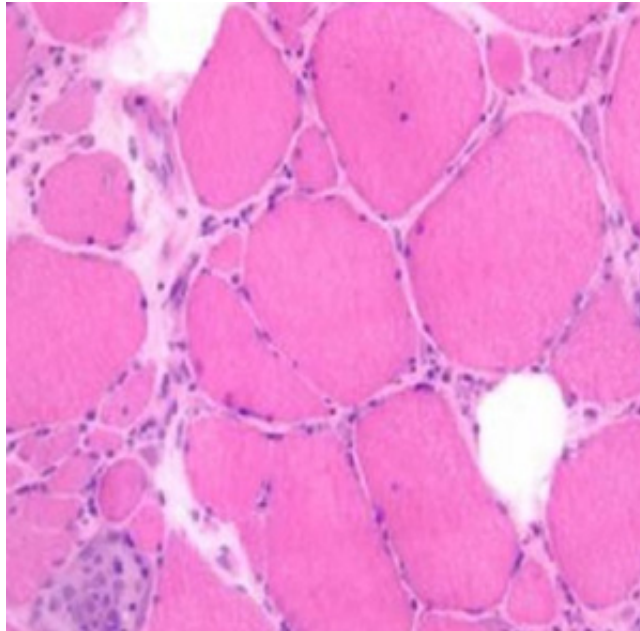


Figure 3. Histopathology indicating muscular hypertrophy (enlarged muscle fibers).

the surgery in bovine (Dhindsa *et al.*, 2010). Thus, fetotomy provides a good and feasible alternative over caesarean section to relieve dystocia caused by abnormal fetuses (Vermunt, 2009).

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