Management of dystocia due to vertex posture in Assam hill goat: A case report

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Abstract
An Assam hill goat of one and half year was presented to veterinary clinical complex, Lakhimpur College of Veterinary Science with prolonged labour since 11 hours. On clinical examination, slight extended fetal forelimb was observed outside the vulva with anterior longitudinal presentation within the birth canal and by per vaginal finger examination it was diagnosed to be Nape posture. Presence of pinching reflex revealed that the fetus was alive. The fetus was initially lubricated with proper lubricant and delivered carefully by applying repulsion and traction.

Keywords: Assam hill goat, dystocia, repulsion, traction and vertex posture

Introduction
In small ruminants, the incidence of dystocia is low compared to large ruminants (<5%) (Bhattacharyya et al., 2015) [1]. Incidence of dystocia in goat has been reported to be about 7% (Abdul-Rahman et al., 1999) [1]. Dystocia, or difficult birth, is a contributory factor in perinatal death of dams and newborns because of damage to the birth canal and use of excessive traction forces (Brounts et al., 2004; Scott, 2005) [4, 14]. Dystocia usually occurs when the first or second stages of parturition are delayed or when the first stage fail to progress to the next stage within 30 minutes (Brounts et al., 2004; Fabini and Ducharme, 2004) [4, 6]. Generally, dystocia may be of fetal or maternal origin (Noakes et al., 2009) [12]. Fetal dystocia occurred mainly due to oversize, mal-disposition, and monsters (Majeed and Taha, 1989; Noakes et al., 2009) [9, 12]. Maternal dystocia were mainly due to a deficient dilatation of the cervical canal (ringwomb), narrow pelvis and uterine inertia (Franklin Thomas, 1992) [5]. In some goats flocks, ringwomb, or incomplete cervical dilatation is a major problem. The cause of ringwomb is still unknown but may be due to a lack of release of hormones involved in softening collagen or a lack of response of the collagen in the cervix to hormonal stimulation (Wu et al., 2004) [16]. Narrowing of the pelvis is the second important cause of dystocia. This is a warning for an improper management, especially with reference to the mating age and the selection for easy parturition. Additionally, some females may be themselves not fully grown and their pelvis may be quite small (Jackson, 1995) [7]. According to Jackson (1995) [7], fetal mal-disposition is the most common cause of caprine dystocia. It has been assumed that mild or severe fetal ill and fetal death might predispose to fetal mal-disposition (Noakes et al., 2009) [12]. It accounted for an incidence of 20 to 30% of all dystocia cases (Jackson, 1995) [7].

Materials and Methods

History and Clinical Observations
One and half year-old nulliparous Assam Hill goat at full term was presented by farmer of Joyhing to Veterinary Clinical Complex, Lakhimpur College of Veterinary Science Assam, with the history of dystocia, 11 hours after the onset of straining and rupture of water bag, slight extended fetal forelimb was observed to be protruding outside the vulva region with anterior longitudinal presentation within the birth canal (Fig 1). Mild discharge from vagina, intermittent, acute distended abdomen, anorexic from past 36 hours and rectal temperature of 101.7 °F was observed. On clinical examination there was mild dehydration and pale mucous membrane, while rectal temperature, heart rate and respiration were found within the normal limit. On per-vaginal
examination after proper lubrication revealed that a fetus with downward displacement of head in which fetus nose is towards the trachea and the poll is presented at the pelvic inlet in anterior presentation and dorsal sacral position. There was presence of pinching reflex which revealed that the fetus as alive. The fetus was diagnosed to be dystocia due to vertex/butt/poll posture.

Clinical Management
At first, the birth canal was lubricated properly with sodium carboxy methy cellulose gel revealed extended forelimbs protruded outside the vagina in anterior longitudinal presentation. As the doe was nulliparous, having narrow pelvis, the head of the fetus nose was towards the trachea and the poll was presented at the pelvic inlet hindering the fetus head to come out from the vagina thereby a gauze bandage was guided with the help of forceps to pass the poll of fetus to get relieved from vertex posture. Afterward both forelimbs were tied with cotton rope using the repulsion and traction method where the fetus was pushed back into the uterine cavity to correct the head and neck mal posture. After correcting the head posture, traction was applied using a thin rope to withdraw the head first outside the vagina and then followed the both forelimbs pulled out one by one manually by applying gentle traction (Fig 2). After making the fetus to normal presentation, posture and position mild traction was applied to get relived from dystocia (Fig 3). Placenta got expelled 25 minutes later. The doe did not exhibit secondary complications like uterine straining or prolapse after relieving dystocia.

The goat was administered with DNS (5 %, intravenously), Tolfenamic acid @ 2mg/kg body weight intra muscularly, Chlorpheneramine maleate @ 0.5 mg/kg body weight intra muscularly and ceftriaxone @ 10 mg/kg body weight and intrauterine preparations of Nitrofurazone plus urea @ 1 gm bolus was given to hasten the involution of uterus and control the infection. The animal was treated for further five days with antibiotic, NSAID, Liver tonic and vitamin (B complex) along with administration of intrauterine bolus for three days. The animal was found to respond well to the treatments and advice the owner to report after the completion of course of treatment, further 1 week telephonically after treatment, and the animal recovered uneventfully.

Discussion
Dystocia or difficulty in giving birth, in goat causes a greater economic loss to farmers either due to death of doe or new born or adversely affecting doe fertility in the subsequent breeding (Mcsporran KD, 1980) [11]. Dystocia mostly occur in primiparous than pluriparous animals, and ringwomb was most common form of dystocia in does and ewes (Noakes et al., 2009) [12]. Also failure of the cervix to dilate may be attributed to failure of secretion of the hormones that control labor or of the tissue response to hormonal secretions (Palliser et al., 2006) [13]. In the absence of a high concentration of progesterone, prostaglandin F2 alpha and oxytocin allow calcium ions in the cell membrane to stimulate energy release from adenosine triphosphate, resulting in the contraction of the actin myosin filament (Liggins et al., 1973; Stys et al., 1978) [8, 15]. On the other hand narrowing of the pelvis was the second important cause of dystocia in doe. This was a warning for an improper management, especially with reference to the mating age and the selection for easy parturition. This finding strongly suggested variations in pelvic dimensions among goats (Majeed AF 1994; Al-Hamedawi, TM and Khammas DJ 1994; and Abdul-Rahman et al., 1999) [10, 2, 1] ultimately lead to mal presentation, malposition and malposture of the fetus resulting in dystocia. It has been suggested that correction and traction of the fetus were the primary safe techniques to relieve the dystocia.
Conclusion
In conclusion, by determining the causes and factors rapidly, the occurrence of dystocia can be prevented or treated quickly to save the lives of the dam and the fetus as well as to prevent economic losses to the farmers.

References