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Clinical Article

DYSTOCIA DUE TO FOETAL ACHONDROPLASIA WITH CONGENITAL CRANIO-FACIAL DEFORMITY AND EPITHELIOGENESIS IMPERFECTA IN A KANNI DOE

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SUMMARY

A full term pregnant pluriparous Kanni doe was presented to the Resident Veterinary Services Section, Madras Veterinary College Teaching Hospital, Chennai with the history of difficulty in parturition, blood stained vaginal discharge and straining for last six hours. Per vaginal examination revealed fully dilated cervix and a dead fetus with anterior presentation, extended forelimbs and deformed head. Based on these, the case was diagnosed as dystocia due to foetal monster. The successful per-vaginal delivery of a foetal monster with achondroplasia, congenital cranio-facial deformity and Epitheliogenesis imperfecta in a Kanni doe was reported in this communication.

Keywords: Achondroplasia, Doe, Dystocia, Epitheliogenesis imperfecta, Prognathism

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Fetal cause of dystocia occurs most commonly due to abnormal presentation, position and posture along with anomalies and monsters. Fetal monsters arise from adverse factors affecting them in the early stages of development which are mostly of genetic origin but may also include physical, chemical and viral origin (Jackson, 2004). Achondroplasia, a non lethal form of chondrodysplasia is the most prevalent form of skeletal dysplasia with characteristic short limb dwarfism due to simple autosomal recessive gene (Bhusal *et al*., 2020). Epitheliogenesis imperfecta is a hereditary condition where the epithelium fails to form skin commonly on the distal extremities of legs below the knees and hocks and on the muzzle, ears, tongue and oral mucosa which is due to defect in single autosomal recessive gene causing complete local failure of tissue growth (Roberts, 1986). In the present paper, we report a case of dystocia due to foetal achondroplasia with congenital craniofacial deformity and Epitheliogenesis imperfecta in a Kanni doe and its successful per-vaginal delivery.

A three years old full term pluriparous Kanni doe was presented to the Resident Veterinary Services Section, Madras Veterinary College Teaching Hospital, Chennai with the history of difficulty in parturition, blood stained vaginal discharge, busted water bag and straining for the last 6 hours. The clinical examination revealed a normal rectal temperature (103 ºF), pulse (73) and respiration (18). On per vaginal examination, the cervix was fully dilated and the fetus was in anterior longitudinal presentation (P1); dorso-sacral position (P2); extended forelimbs with deformed head (P3). Based on the obstetrical observations, the case was diagnosed as dystocia due to foetal monster.

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Following low caudal epidural anaesthesia with 2% Lignocaine hydrochloride @ 1ml, a dead monster foetus was extracted out with gentle manual traction. After delivery, the doe was treated with Inj. Enrofloxacin @ 5mg/kg B.wt, Inj. Chlorpheniramine maleate @ 0.5mg/kg B.wt, Inj. Meloxicam @ 0.2mg/kg B.wt intramuscularly for three days and 10 IU of Inj. Oxytocin intramuscularly on day one. The dam had an uneventful recovery. The detailed examination of the monster foetus revealed achondroplasia, craniofacial deformities with maxillary brachycephalus and prognathism of the mandible (Fig. 1); Epitheliogenesis imperfecta of ventral aspect of foetus (Fig. 2); congenital vertebral deformities with prominent thoracic lordosis, lumbar kyphosis, rhizomelia of femur (Fig. 3), eviscerated visceral organs and agenesis of reproductive system.

In sheep and goats, the incidence of dystocia due to fetal causes varies between 8 to 50 percent (Purohit, 2006). Agrawal (2020) stated that, achondroplasia is the most common cause of disproportionate short stature which is most prominent in the proximal segment of the limb i.e. shortening of femur and humerus (rhizomelia). Phenotypic features of achondroplastic fetuses include abnormally short long bones, normal trunk length, large abdomen with moderately enlarged, short, broad and flattened head or "Bulldog" head, bulging forehead (frontal bossing), brachygnathism of the maxilla, prognathism of the mandible, malocclusion of the jaw and prominent lumbar lordosis (Roberts, 1986). The present foetus revealed typical features of achondroplasia as described by Roberts (1986); Jana and Jana (2009); Dewry *et al*. (2019). Achondroplasia of varying degrees has been attributed to lethal autosomal genes where line breeding or

Fig. 1 to 3. (1) Foetal achondroplasia with craniofacial deformity; **(2)** Epitheliogenesis imperfecta of ventral aspect of thorax and abdomen; **(3)** Congenital vertebral deformities showing curved vertebrae;

inbreeding is practiced (Dabas *et al*., 2013). Epitheliogenesis imperfecta is a rare congenital disorder characterized by an abruptly segmental absence of the epidermis and epithelial derived structures of the skin occuring mainly on the trunk which was reported in a calf by Venkataramanan *et al*. (2010) and Azizi *et al*. (2016). In the present foetus, skin failed to develop in the ventral aspect of thorax and abdomen. This foetal monster can be delivered per-vaginum or cesarian section based on its size and deformities. In the present case, foetal achondroplasia with congenital craniofacial deformity and Epitheliogenesis imperfecta was delivered successfully through per-vaginum.

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