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A rare case of facial dysmorphism, hydrocephalus and ankylosis in a Goat kid

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Abstract
A full term doe was presented at our clinic with severe straining and vaginal discharges for the last 48 hours. Upon abdominal ballottement fetus was palpable. Vaginal examination revealed a fully dilated cervix with partially moist birth canal. Fetal head was dorsally bulged with broken and half developed cranium. Gentle traction was applied in downward direction and a dead fetus was delivered which was suffering from facial dysmorphism, hydrocephalus, and fixed joints of hind limbs. Thus a rare case of dystocia due to hydrocephalus, facial dysmorphism, ankylosis and multiple abnormalities of head, neck and joints in a goat kid was relieved following gentle traction on head and fore limbs.

Keywords: Anophthalmia, Ankylosis, Dystocia, Facial dysmorphism, Doe, Kid

1. Introduction
A dysmorphic feature is a difference in a particular body structure. It can be an otherwise normal individual or it can be related to any genetic syndrome, congenital disorder, or birth defect (Reardon and Donnai, 2007) [1]. In veterinary medicine, dysmorphology is still a neglected field of knowledge. However it has begun to take shape in line with the advances in veterinary medical genetics. Its basis is derived from human dysmorphology due to current knowledge of the genomic similarities between man and other vertebrates, especially mammals, showing that morphogenesis is evolutionarily conserved throughout the zoological scale. The inductive molecular mechanisms that form the embryonic pattern are identical in all vertebrates (Opitz *et al.*, 2002) [2]. These dysmorphic features can vary from isolated, mild anomalies to severe congenital anomalies. In some cases dysmorphism is a part of a larger clinical picture (Maitra and Kumar, 2004) [3]. The recognition of patterns of dysmorphism is an important part of a geneticist's diagnostic process, as most of the genetic diseases may be present with a common collection of features (Reardon and Donnai, 2007) [1]. Dysmorphic features are invariably present from birth, although some are not immediately apparent upon visual inspection. According to the nature of the alteration that causes the dysmorphism and the stage at which it manifests, they can be divided into different groups, including malformations (abnormal development), disruptions (damage to previously normal tissue), deformations (damage caused by an outside physical force) and dysplasias (abnormal growth or organization within a tissue) (Maitra and Kumar, 2004) [3]. These malformations begin earlier during the embryonic period, while disruptions appear later. Most of these deformations begin during the fetal stage, which is when the conceptus grows rapidly (Kumar and Burton, 2008) [4]. A disruption is a morphological defect of an organ, part of an organ or a larger region of the body, resulting from a disturbance in an originally normal developmental process (Spranger *et al.*, 1982) [5]. The present report describes a rare fatal condition of facial dysmorphism along with cranial defects, hydrocephalus and ankylosis of hind limb joints in a goat kid that lead to dystocia.

2. Case history and observations
A full term pluriparous doe in its second parity was presented at Veterinary Clinical Service Complex, Sher-e-Kashmir University of Agricultural Sciences and Technology, Shuhama, Srinagar, Kashmir, with the history of severe straining and vaginal discharges for the last 48 hours. The animal was in debilitated condition and had shown decreased feed and water intake. Rectal temperature (104 °F) and heart rate (94 beats / min) and the mucus membranes were congested. The animal was showing bruxism. Upon abdominal ballottement fetus was palpable. Vaginal examination revealed a fully dilated cervix with partially moist birth canal. The fetus was having anterio-longitudinal presentation and was in dorso-sacral position. The fetal hooves of both the anterior limbs were extended into the birth passage. Fetal head was dorsally bulged with broken and half developed cranium. The fetal reflexes were absent.

3. Treatment and Discussion

The fetus was repelled back into the uterus create a space for lubricating the birth passage using liquid paraffin. The hand was curved above its head and secured. Now a gentle traction was applied in downward direction and a dead fetus was delivered. After delivery, furazolidone and urea (Furea, one bolus) was placed in uterine cavity of the doe. Dextrose Normal Saline (500 mL, iv, stat.) was administered stat. Ceftriaxone (inj. Intacef, Intas Pharmaceuticals 0.5 g i/m, bid), Meloxicam (inj. Melonex, Intas Pharmaceuticals, 0.5 mg/kg body weight, i/m, OD) and calcium (inj. Cal D 12, 3 mL, i/m, OD) were prescribed for 3 days. The animal recovered and resumed feeding and water intake within two days of delivery. Gross examination of the deformed kid revealed that the kid was suffering from facial dysmorphism, hydrocephalus, and fixed joints of hind limbs, with a rough hair coat (Figure 1 & 2). The observed cranio-facial abnormalities of the face or head were misshapen head and complete absence of, a) both eyes (anophthalmia), b) ear canals, c) upper jaw and (d) nasal opening. The cranium was also not fully developed. This condition is usually associated with holoprosencephaly, a cephalic disorder in which the prosencephalon (the forebrain of embryo) fails to develop into two hemispheres causing defects in face development and facial deformities that may affect the eyes, nose, and upper lip (Paolo *et al.*,2005) [6]. The exact cause of hydrocephalus could not be ascertained but the condition may be caused by the alterations in genetic factors, infectious agents and environmental factors (Kalman, 1989) [7]. The present case was showing severe form of holoprosencephaly and also revealed presence of fixed joints (ankylosis). In summary, a rare case of facial dysmorphism, hydrocephalus and ankylosis was associated with dystocia in a goat kid was reported.

Fig 1

Fig 2

Fig 1 & 2: Facial dysmorphism partially developed cranium and fixed joints in a goat kid

3. References

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