

A RARE CASE REPORT OF PEROSOMUS ELUMBIS WITH CONCURRENT VISCERAL ABNORMALITIES IN A JERSEY CROSS BRED CALF

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Perosomus elumbis (PE) is an occasional congenital anomaly of cattle, swine, sheep, and dogs with unknown aetiology. This congenital anomaly occurs in both the sexes (Jones, 1999). Perosomus elumbis, which occurs in ruminants and swines, is characterized by hypoplasia or aplasia of the spinal cord, which ends in the thoracic region. The regions of the body including the hindlimbs, which are normally supplied by the lumbar and sacral nerves, exhibit muscular atrophy, and joint movement does not develop (Noakes et al, 2009). This abnormality is a fairly common congenital defect in cattle (Roberts, 1986). It usually includes arthrogryposis of the hind limbs, characterized by ankylosis of the joints, with associated malformations of the musculature (Roberts, 1986). Perosomus elumbis in a calf was first reported in the veterinary literature in 1832 by Ernst Gurlt, and since then cases have been reported (Jones, 1999). This paper describes the clinical and radiographic evaluation of perosomus elumbis concurrent with a lot

of visceral abnormalities in a Jersey cross-bred calf.

A day old calf was presented to Large Animal Clinic-Out Patient (LAC-OP) unit of Madras Veterinary College Teaching Hospital with the history of constipation and unable to defecate since birth. On the physical examination there was atresia ani, recto-vaginal fistula (Fig: 1) and angular limb deformities, and distended abdomen. Plain radiography of abdomen lateral view was taken, which was confirmed as Perosomus Elumbis (PE) anomaly.

Radiographic analysis revealed agenesis of sacral and coccygeal vertebrae (Fig: 2). The femurs were malformed. There was fusion of both hock joints. The hind limbs were hypoplastic with bilateral symmetric arthrogryposis and muscular atrophy (Fig: 3,4). Thoracic vertebrae and ribs were normal.

Scientific publication on Perosomus Elumbis (PE) in cattle have only consisted

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of case reports focusing on morphology (Jones, 1999; Williams, 1931; Greene et al, 1973) although a recent publication suggested the fetal infection with bovine viral diarrhoea virus (BVDV) may contribute to the development of PE (Karakaya et al, 2013). There is also a report of ovine PE case following feeding of pregnant sheep with *Veratrum californicum* on gestation days 16 and 17 was mentioned by Dennis et al, 1975. Although the spinal lesions are the most striking and the cause of hind limb dysplasia, visceral defects were present as well in PE. Visceral defects may occur due to disturbed development of the embryonic back. Similar lesions have been found in other bovine syndromes with widespread disturbed segmentation of the embryonic back such as the brachyspina syndrome (Agerhome et al, 2004) but such abnormalities seem also to be rather frequent in cases with spinal lesions restricted to the coccygeal vertebrae, i.e. the caudo-recto-urogenital syndrome (Vitelozzi et al, 1988). *Perosomus Elumbis* cases are often reported to have caused dystocia requiring cesarean section and the syndrome is therefore associated with maternal welfare concerns and economic losses beyond those of the lost offspring (Williams, 1931). In the above case there was history of dystocia which was relieved by local veterinarian. Caudal presentation is usually present in only 5% of bovine deliveries (Noakes, 2009) and is apparently

much more common in PE affected calves. Due to the hind limb arthrogryposis, calves will thus be presented in breech position, which is a life threatening condition for the dam as such calvings may remain unnoticed thus leading to fetal death, emphysema and maternal intoxication. A majority of bovine fetuses are in caudal presentation during gestation months between 4 – 6½ after with most of them (95%) reposition to cranial presentation (Noakes, 2009). The underlying mechanisms for these fetal movements seem to be disturbed in PE affected fetuses.

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Fig: 1 Atresia ani and rectovaginal fistula



**Fig: 2 Plain radiograph- Abdomen lateral view
Agenesis of sacrum and coccygeal vertebrae**



Fig :3 Stifle lateral view- Arthrogyrosis



Fig: 4 Pelvis V-D view

