

Anencephaly in a second trimester camel foetus in Sokoto, Nigeria: a case report

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Abstract

A second trimester camel foetus was obtained during a study of camel fetal wastages in June, 2009, at Sokoto metropolitan abattoir, Sokoto, Nigeria. The fetus weighed 1.75kg and grossly showed abnormalities of the face, cranial cavity and vertebral column. The dissected fetus revealed anencephaly and scoliosis. Documentations of congenital defects may help to decrease economic loss and enhance camel population within the country.

Key words: Anencephaly, camel, fetus

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1. Introduction

Generally, congenital defects may be caused by inherited genetic defects, spontaneous mutation within the genes of the embryo, or effects on the embryo due to the dam's infection, trauma, drug use and ingestion of poisonous plants.

Congenital malformations or defects are present in most species of livestock in Sokoto, Nigeria, (Sonfada et.al., 2007). In most herds they are rather uncommon, however occasionally the frequency within a herd or a particular specie or breed will be high enough to be of considerable economic importance. In the study area, little information exists on congenital defects within the camel specie, (Garba 1993). Therefore, this paper reports congenital anomalies of the skull, vertebral column and the brain of a second trimester camel foetus in Sokoto, Nigeria.

2. The case report

During a study of camel foetal wastages in June, 2009, at the Sokoto

metropolitan abattoir Sokoto, Nigeria, a second trimester malformed camel foetus was obtained and taken to Veterinary Anatomy Laboratory of Usmanu Danfodiyo University, Sokoto. The fetus weighed 1.75kg with crown to rump length (CRL) of 45cm. The eye bulbs bulged out of the socket and the tongue protruded outside the oral cavity. There was mid dorsal skin tear, from parieto-occipital region to sacral area of the vertebral column (plate 1). The dorso-caudal part of the cranium consisting of frontals, parietals and occipital bones was compressed and firmly attached to the first few cervical vertebrae, which were twisted in this case. This result in the formation of a compact rough mass at the dorsal aspect of the cranium (plate 1). There was dorsal elevation/curvature at the thoraco-lumbar part of the vertebral bone (plate 1). The dissected fetus revealed a right lateral deviation of the vertebral bones (plate 2), obliteration of the cranial cavity and absence of the cerebral hemispheres of the brain (plate 3). Other structures within the oral and

nasal cavities and the spinal cord were observed to be normal.

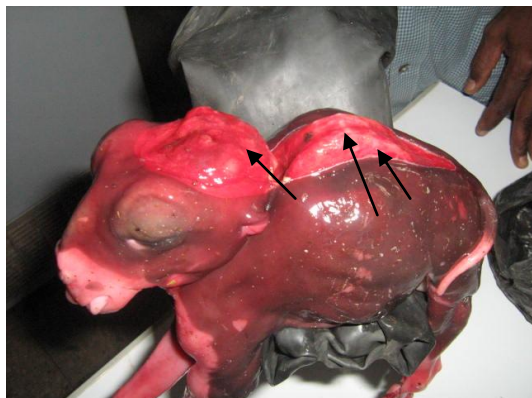


Plate 1: Camel foetus showing dorsal bonny mass of the cranium, dorsal elevation of the vertebral bone and skin tear, arrows in cranio-caudal order.

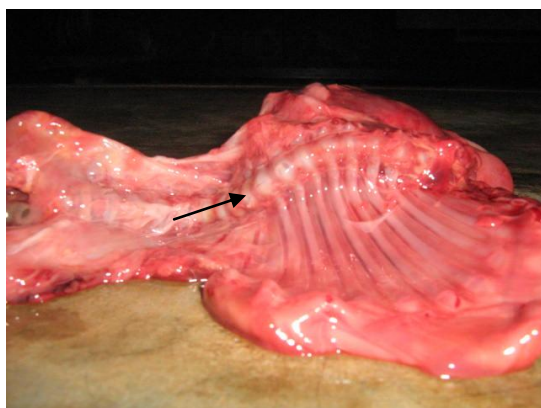


Plate 2: Camel foetus showing thoracic vertebrae deviated laterally (arrow)

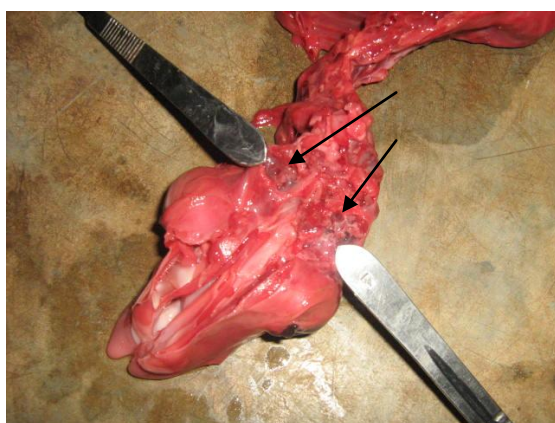


Plate 3: Head of camel foetus showing obliterated cranial cavity leaving bilateral depressions and absence of cerebrum (arrows)

3. Discussion

Fetal loss is a common occurrence in Sokoto abattoirs and slaughter slabs today (Garba et al., 1992., Umar et.al., 2006; Bello et al., 2008). This is because several hundred of pregnant animals are being slaughtered daily. Many congenital malformations involving external features are observed during studies of fetal wastages, while many others go unnoticed. A large proportion of congenital defects in domestic animals are said to be of multifactorial aetiology but actual cause is often undetermined (Sonfada et.al., 2007). This case reported anencephaly, a complete absence of the cerebral hemispheres or its tissue from the cranial cavity (Saddler, 2004). This is first of its kind in this species and in Sokoto, Nigeria and might have resulted by the degeneration of the brain tissue which later becomes necrotic during early embryogenesis; caused by compression of the bones of the calvarium and cervical vertebrae, which completely obliterate the cranial cavity. The spinal cord was found to be within its canal. Brain development begins shortly after conception and continues throughout the growth of the fetus and anencephaly results due to failure of the cephalic part of the neural tube to close (exencephaly) (Saddler, 2004). Congenital scoliosis is lateral curvature of the spine, resulting from disruption of normal vertebral development (Saddler, 2004). There are many types of scoliosis and defects associated with congenital scoliosis. All result from abnormal formation and segmentation of the vertebral precursors (somites), (Erol et.al., 2002). Abnormal segmentation resulting to scoliosis is common in human and animals (Saddler, 2004 and Noden and DeLahunta, 1985), but has not been reported in the camel species in Sokoto Nigeria. The scoliosis as seen in this case was as a result of damage to the nervous system (Arthur et.al., 1996).

4. Conclusion

Generally, there is dearth of information on scoliosis and anencephaly of the camel species in Nigeria, therefore breeders should be conscious of potentials defects. Report cases of camels exhibiting unusual characteristics must be documented and published. There is a special need to document, camel congenital malformations by the responsible authority in Nigeria. Documentations of congenital defects may help to decrease economic loss and enhance camel population within the country.

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