

## **ABSTRACT**

### **Background**

Holoprosencephaly is a forebrain deformity that results from varying degrees of separation failure of cerebral hemispheres. The condition is classified based on the degree of non-separation of the hemispheres which, in turn, determines its severity. Holoprosencephaly is usually accompanied by craniofacial defects whose severity tends to reflect the extent of brain deformities. In humans, holoprosencephaly is one of the commonest congenital brain anomalies but in animals, reported cases are scarce. The condition has multifactorial aetiology that involves interactions between several genetic and environmental factors.

### **Case presentation**

A 4-day-old female Friesian calf with a deformed face was reported to the Faculty of veterinary medicine and surgery, Egerton University. The calf and the dam were sired by the same bull. On clinical and radiographic examination, the calf had a short snout that curved dorsally with bilateral cleft lip, right-sided cleft jaw and a largely absent primary palate. Anatomopathological examination revealed brain deformities which included ventral fusion of frontal lobes of cerebral hemispheres, large merged lateral ventricles without septum pellucidum and fornix, hypoplastic corpus callosum, high degree of non-separation between diencephalic structures, poorly developed hippocampal formation and hypoplastic olfactory lobe, optic chiasma, and nerve.

### **Conclusion**

The case was confirmed as lobar holoprosencephaly based on characteristic anatomopathological findings. The aetiology of the defects in the present case could not be determined though they are thought to be either a result of recessive inheritance or exposure to teratogenic steroid alkaloids through materials fed to the dam during early pregnancy.

**Keywords:** Congenital malformation, craniofacial defects, forebrain, holoprosencephaly, orofacial defects