Cleft lip and palate in a kid-a case report

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ABSTRACT
The occurrence of cleft lip and palate in a Malabari kid is reported and discussed the possible reasons. The kid showed brachygnathism, cleft lip and cleft palate. The doe had a history of abnormal kids in her first kidding, which indicated the possibility of genetic cause. Because of the presence of brachygnathism, the kid could not apply negative pressure to suckle the milk. As the kid might have already swallowed the fluid within the womb, this might have led to respiratory disturbances and death. It was suggested that the doe should not be bred due to the hereditary nature of this condition.

Key words: Cleft lip, Cleft palate, Kid.

Cleft is a fissure or opening due to non-function of the natural structures of the body that form before birth. Clefts of upper lip (cheiloschisis) are often associated with clefts of the alveolar process and palato. The palatoschisis (cleft palate) is the condition in which two plates of skull that form the hard palate are not joined completely. The soft palate has also cleft in these cases. In most of the cases, the cleft lip and cleft palate may occur together. Palatoschisis results in the communication between the oral and nasal cavities. This usually leads to respiratory infections as a result of aspiration of milk or feed into the respiratory tract. The present report describes a condition of cleft lip and palate in a kid.

A pleuriparous Malabari doe was brought to the Veterinary Dispensary, with a history of dystocia. Pervaginal examination of the doe revealed a fully dilated cervix and the foetus was in its anterior presentation in dorsosacral position with flexion of fetlock joints of both the forelimbs. Head was in normal position, but felt an abnormality on the face. Correction of the flexed joints was done and the foetus was pulled out manually. Following this, another kid was delivered normally.

On clinical examination, the first kid showed brachygnathism, cleft lip and cleft palate (Fig. 1). The second kid was normal and actively suckled the doe. But the abnormal kid was less active and showed difficulty in suckling. The farmer bottle-fed the kid but it showed breathing difficulty and died within three hours. The doe had a history of first kidding with two abnormal kids with cleft palate, which survived for three months. In her second kidding, a normal kid was born. The present case was its third kidding.

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Cleft lip and palate is a rare congenital disorder of new born animals. The upper lip is formed earlier than the palate, from the frontonasal and maxillary prominences. Formation of the palate is the last step in joining the embryonic facial lobes and involves the caudal portions of the maxillary and mandibular prominences. These caudal portions are called palatal shelves, which grow towards each other until they fuse in the middle (Dudas et al. 2007). This process is highly vulnerable to multiple toxic substances, environmental pollutants and nutritional imbalance. Ingestion of toxic agents, use of steroids and some viral infections during pregnancy were also reported to be the causes of cleft palate (Fraser et al. 1991). Fissure formation at the cranial sutures, partial absence of the nasal process of the incisive bone, and opening of the bony palate were reported to be the characteristic changes in median cleft lip and palate (Moritomo, 1999).

The present case had a history of abnormal kids in her first kidding, which indicated the possibility of genetic cause. Genetic factors contributing to cleft lip and cleft palate formation had been identified for some syndromic cases, but knowledge about genetic factors that contributed to the more common isolated cases of cleft lip or palate was still not clear (Beaty et al., 2011). According to Cox (2004), the genetic reason was the sequence variance in the genes IRF6, PVRL1 & MSX1. Millicovsky and Johnston (1981) reported that the hypoxia during early pregnancy in mice retarded the catalytic activity of PHF8 gene. According to Loenarz et al. (2009), the PHF8 gene which encoded for a histone lysine demethylase, proved to increase the incidence of cleft palate and lip and other congenital abnormalities. Panter (2009) confirmed that anagyrine, the alkaloid present in Lupine plants and the wild tree tobacco toxins could cross the placental barriers and resulted in foetal immobility in cows and Spanish goats. This resulted in skeletal deformities in the offsprings. The biologic mechanisms of mutual recognition of the two cabinets and the way they are glued together, are quite complex. The first symptom usually shown by the affected kid would be dribbling of milk from nostrils after nursing. But in the present case, the kid had brachygnathism, chelioschisis and palatoschisis. Hence the kid could not apply negative pressure to suckle the milk. As the kid might have already swallowed the fluid within the womb, this might have led to respiratory disturbances and death.

Cleft lips and palates were occasionally reported in cattle and dogs, and rarely in sheep, cats, horses, pandas and ferrets. Among dogs, brachycephalic breeds such as Boxers and Boston Terriers were most commonly affected (Ettinger and Feldman, 1995). The most common problem is difficulty in nursing and in most cases lead to aspiration pneumonia, regurgitation, malnutrition and finally leads to death. Providing nutrition through feeding tubes till three months and then doing surgical repair is the line of treatment. Now prosthesis, mucosal flaps, microvascular free flaps were tried for surgical repairs in case of dogs. It is suggested that the doe should not be bred due to the hereditary nature of this condition.

REFERENCES