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Bilateral anophthalmia and asymmetry of face and head in canine fetus

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Abstract
A non-descriptive bitch was presented to the clinics had delivered three dead fetuses around 24h earlier. The bitch was dull and anorectic and was not straining. On clinical evaluation and per vaginal examination, foul smelling uterine discharge was observed. Radiographic investigations confirmed presence of one pup in the uterus. Consistent efforts by the bitch and failure of expulsion of remaining pups might have led to exhaustion and hence secondary uterine inertia. After resuscitation, cesarean section was conducted under general anaesthesia (Atropine + Xylazine and Ketamine) to relieve the condition. One abnormal pup with bilateral anopthalmia was delievered. The failure of fetal brain development might have lead to bilateral anopthalmia and asymmetry of the face and head. Anopthalmia in fetus of non- descriptive bitch, successfully treated by cesarean section is reported.

Keywords: Non-discriptive, uterine inertia, resuscitation, cesarean section, anopthalmia

Introduction
Anophthalmia is a very rare congenital condition in canines where a pup is born without one or both of its eyes and the globe and the occular tissue are missing from the orbit (Shibuya K *et al.* 2000) [9]. It may either be a) primary; complete absence, b) secondary; presence of only residual tissue, c) Degenerative anophthalmia; eye starts forming and for some reason starts degenerating. Genetic mutations, chromosomal abnormalities and prenatal environment may lead to such malformations. Some of the cases of anophthalmia are also present with other congenital defects such as asymmetries of the face and head, and the defects related to the external ears (Hesselberg C 1951) [4]. The orbits of anopthalmic individuals are most oftenly small and shallow. Anophthalmos occurs in association with inadequate development of the primary optic vessels and lack of growth of the optic cups Maggs D *et al.* (2007) [7], Drew MN and DeLahunta A (1985) [2]. In cases of anophthalmia with intact lacrimal glands results in tear production and leads to the infection of orbit. According to Halilbasic *et al.* (2018) the etiology of anophthalmia is complex and not clearly understood. Wherever it usually associated with chromosomal, monogenic and certain environmental causes. It usually occurs in association with other systemic malformations particularly involving cardic, musculoskeletal and central nervous system. whereas congenital anophthalmia has been mostly reported in pig, horse, cow, dog, cat and guinea pig (Dell 2010).Complete anophthalmia is rare. In most cases, some vestigial occular tissue can be detected through post-mortem examination and histopathology.

Case history and diagnosis
A non-discriptive bitch was presented to the Veterinary Clinical Complex of KCVAS, Amritsar, with the history that the three dead foetuses were delivered around 24h earlier. The bitch was dull and anorectic and was not straining. Supportive measures to relieve dystocia were made by local vet by administering oxytocin, calcium and glucose therapy but were futile. After this case was presented to VCC of KCVAS and then on the clinical evaluation and per vaginal examination, foul smelling uterine discharge was observed. Lateral side radiographic investigations confirmed presence of one pup in the uterus. Consistent efforts by the bitch and failure of expulsion of remaining pup might have led to exhaustion and hence secondary uterine inertia. The bitch was showing frequent labour pain, licking the hind part, pyrexia and had gone for off feed since twenty four hours. The bitch had congested mucus membrane with body temperature 102.4ºF, respiration rate 50 per minute and heart rate 120 per minute.

Treatment

Primary uterine inertia is one of the main cause of dystocia from maternal side, approaching 75% of the cases Gary England FRCVS (1996) [3]. This may be due to disturbances of the physiological interaction between hormones (oxytocin) and electrolytes (low plasma calcium concentration). Secondary uterine inertia is most commonly occurs as the result of uterine exhaustion following obstructive dystocia Darvelid AW and Linde-Forsberg C (1994) [1]. This may occur due to an obstruction in the birth canal or may happen spontaneously during second stage parturition. The animal had already whelped 3 dead pup 24 hours earlier and now it has become very dormant with occasional labour pain indicating development of secondary uterine. So, in this emergency condition the cesarean section under general anesthesia (Atropine + Xylazine and Ketamine) was performed on the Mid-ventral line to save the dam. One abnormal pup with bilateral anopthalmia was delievered (Fig.1 & Fig.2)

Discussion

In the canine eye, there are many opportunities for developmental defects to occur during embryogenesis. There are 3 embryonic tissues that contribute to normal eye development: neuroectoderm of the forebrain, surface ectoderm of the head, and mesenchymal tissue of neural crest origin Hyttel P *et al.* (2010) [5]. Canine eyelids normally separate at approximately 14 d after birth as they are fused only for a temporary period. Microphthlamos is defined as an abnormal reduction in ocular size and can range from a globe that is only slightly smaller than normal to one that is only vestigial Hyttel P *et al.* (2010) [5], McGeady TA *et al.* (2006) [8], Kirk NG (2008) [6]. Most cases of microphthalmia occur when growth of the optic cup is severely inhibited (1). The condition may be associated with genetic defects, uterine infections, or drug toxicities Hyttel P *et al.* (2010) [5], Kirk NG (2008) [6]. Maternal vitamin A deficiency can result into microphthalmia in dogs, pigs, cattle and guinea pigs Hyttel P *et al.* (2010) [5], Drew MN and DeLahunta A (1985) [2]. Microphthalmia may be seen in kittens that are exposed to griseofulvin during gestation Hyttel P *et al.* (2010) [5]. The most common canine breeds affected are Akitas, collies, schnauzers, Australian shepherds, and great danes Hyttel P *et al.* (2010) [5], Drew MN and DeLahunta A (1985) [2]. Anophthalmos and microphthalmos are conditions of rare occurrence and little research has been carried out on these topics. In this case, no globes were visible within the orbits on physical examination so it was considered as the Anopthalmic pup. Confirmation of this diagnosis can only be made by histopathologic examination. The long-term prognosis of the anopthalmic pup is favorable. The puppy is otherwise physically and socially normal when compared with other pups of his age.

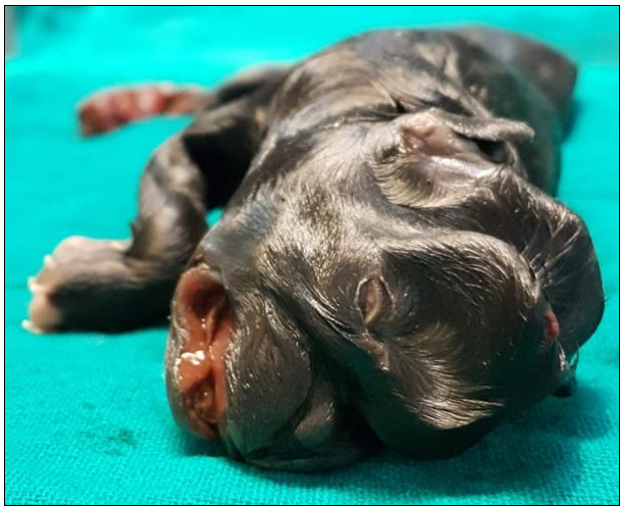

Fig 1: Right eye with anophthalmia

Fig 2: Anophthalmia of the left eye with asymmetry of face and head

Conclusion

Bitch presented with foul smelling uterine discharge and with secondary uterine inertia must be done with cesarean section on emergency basis. Bilateral anopthalemia of the pup may be caused due to the asymmetry of the face and head which lead to the absence of eye.

References

1. Darvelid AW, Linde-Forsberg C. Dystocia in the bitch: A retrospective study of 182 cases. Journal of Small Animal Practice. 1994; 35(8):402-407.
2. Dell MS. Severe bilateral micropthalmos in a Pomeranian bitch. The Canadian Veterinary Journal. 2010; 51(12):1405-1407.
3. Drew MN, DeLahunta A. Embryology of Domestic Animals. Baltimore: Williams &Wilkins, 1985, 116.
4. Gary England FRCVS. Disorders of Parturition in the Bitch". Veterinary Nursing Journal. 1996; 11(3):77-84.

5. Halilbasic M, Jusufovic V, Musanovic Z, Carbic A. Congenital bilateral anophthalmia: A case report and review of literature. Medical Archives. 2018; 72(4):300-302.
6. Hesselberg C. Congenital bilateral anophthalmia. Acta Ophthalmologic. 1951; 29:183-189.
7. Hyttel P, Sinowatz F, Vejlsted M. Essentials of Domestic Animal Embryology. New York: Saunders Elsevier. 2010; 359:170-179.
8. Kirk NG. Essentials of Veterinary Ophthalmology. 2nd ed. Ames, Iowa: Wiley-Blackwell. 2008; 332(379):37-38.
9. Maggs D, Miller P, Ofri R, Slatter D. Slatter's Fundamentals of Veterinary Ophthalmology, 4th ed. Philadelphia: WB Saunders, 2007, 32.
10. McGeady TA, Quinn PJ, Fitzpatrick ES, Ryan MT. Veterinary Embryology. Ames, Iowa: Blackwell Pub, 2006, 295-304.
11. Shibuya K, Tajima M, Nunoya T. Anophthalmia and retinal degeneration associated with stenosis of the optic foramen in Fischer 344 rats. Veterinary Pathology. 2000; 37:264-267.