Clinical Management of Swimmer Puppy Syndrome in a Dog

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Abstract
Swimmer puppy syndrome with warped outward front limbs and splayed hind limbs was observed in a twenty days old male labrador pup. The condition was successfully managed with the help of cotton padding and creep bandage. The pet was put on rough non slippery surface and locomotion was encouraged by playing with the pup. The pet was able to ambulate like normal pup by twelfth day of treatment.

Keywords: Neonatal dogs; padding; swimmer puppy syndrome

Introduction
Swimmer syndrome is a poorly characterized disease seen in neonatal dogs and cats in which the hind legs and front legs are splayed laterally (Verhoeven et al., 2006). Malformations of the chest, joints and even long bones may be present (Fossum et al., 1989). Affected animals often remain in sternal recumbency. The clinical signs are seen in the first week after birth and are most obvious during the fifth or sixth week of age. The animals try to ambulate with swimming like movements and when positioned on smooth surfaces, the clinical signs are more pronounced. Swimming puppy syndrome is also called as flat pup syndrome, twisted leg, turtle pup, splay leg, splay weak and myofibrillar hypoplasia (Suter, 1984). Pectus excavatum (funnel chest, severe deformity resulting from intrusion of the breast bone in to the chest cavity) is an entirely different condition; however it can occur independently or simultaneously with swimmer puppy syndrome. This clinical article describes successful management of swimmer syndrome in a Labrador puppy.

History and Observations
A male Labrador pup aged about 20 days was brought with history of difficulty in respiration, vomiting and not able to walk. The puppy was nursing well and was clinically normal except for the dyspnoea and the vital parameters (temperature 102°F, P/R 120/mt, R/R 25/mt) were within normal limits. There was no family history of swimmer puppy syndrome. Clinical examination of animal revealed flattened chest and abdomen. The front limbs were warped outward (Fig. 1a and b) with splayed hind limbs. Joints were not painful, not swollen and without crepitation during palpation. The puppy was trying to move with paddling motion of the limbs. Haematobiochemical examination showed elevated packed cell volume indicating dehydration. Radiographs of the chest revealed dorsoventral flattening of the chest (Fig. 2a and b).

Treatment
The flat chest was padded with adequate cotton and taped. Creep bandage was applied over it. This brought both the forelimbs adducted (Fig. 3). The owner of the pup was advised to keep the pup on a rough non slippery surface and restricted feeding. The locomotion was encouraged by playing with the pup. After 7 days the animal was able to ambulate normally and by 12th day of treatment no difference could be noticed between the affected pup and the normal pup (Fig. 4).

Discussion
Swimmer syndrome is an uncommon developmental abnormality with malformations of
Swimmer puppy syndrome is similar to the Myofibrillar hypo plastic syndrome seen in piglets. Although the cause is uncertain, it has been suggested that viral/ fungal infections in-utero causes a muscular dystrophy in the developing fetus (Shires and Schulz, 1995). Swimmer puppies are known to occur in several breeds (McKeown and Archibald, 1979). Small breeds (Dachshund, Yorkshire, West highland, White terrier, English Cocker spaniels), breeds with large thorax and short limb (Pekinese, Cavelier king charles, Basset hound, French and English bull dogs) are predisposed to Swimmer syndrome and are also reported in many breeds including German Shepherd, Labrador retriever and Belgian cattle dog. There is no gender-related predisposition (unlike piglets in which the disease affects males twice as much as females). Puppies of normal size at birth but with faster growth than the rest of the litter, slippery floor and deficiency of taurine in puppies may be contributing factors in the development of swimmer.

Wallace and Davidson (1995) reported that treatment should be instituted immediately upon diagnosis, consisting of calorie restriction, physical therapy and improved traction in the nest box. Prognosis for swimmer puppies treated before 3-4 weeks of age is good. Some have suggested hobbling of limbs, compression bandage as the treatment (Shires and Schulz, 1995). Physiotherapy and bandaging led to the resolution of the clinical signs and resulted in normal ambulation after several weeks in English bull dog puppy and Devon rex kitten (Verhoeven et al., 2006). In the present case, provision of rough surface, reduction of diet and a grip bandage like provision to keep the limbs adducted had made the pup to become ambulatory.

**Summary**
A successful management of Swimmer syndrome in a Labrador puppy is placed on record.

**Acknowledgements**
The authors are thankful to the Dean, The Professor and Head, Dept of Clinics, Madras.
Veterinary College, Chennai for providing necessary facilities for the study.

References


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XXVII th Annual Convention of Indian Association of Veterinary Anatomists (IAVA) and National Symposium on 'Advances in Applied Anatomy of domestic and wild animals - An Interdisciplinary approach for Animal health and Wealth' was held at Kerala Veterinary and Animal Sciences University (KVASU), Mannuthy, Thiruvananthapuram from 28th - 30th November 2012. Dr. R. Prabakaran, Vice Chancellor, TANUVAS inaugurated the symposium in presence of Dr. T.S. Chandrasekhar Rao, President, IAVA and Dean, S.V.V.U, Tirupati; Dr. A. Jalaludeen, Director of Academics and Research, KVASU; Dr. N.N. Sasi, Registrar, Kerala State Veterinary Council; Dr. S. Ramkumar, Director of Entrepreneurship, Dr. J.J. Chugath and Dr. N. Ashok, Organising Secretary. A wildlife photography exhibition was also inaugurated on this occasion.

More than 150 Anatomists from all over India participated and presented scientific papers.

Gross and developmental anatomy, biomechanics, forensic anatomy and fossils, clinical anatomy, immunology and immune histochemistry, histology, avian anatomy, wildlife anatomy and biotechnology were the different sessions during the three day symposium.

Dr. R. Prabakaran addressing the anatmist during the inaugural session

Dr. Thandavamoorthy, RAGAVOCAS, Pondicherry and Dr. R.K. Das, OUAT, Bhubaneswar received best Anatomy Researcher Award of IAVA.

KVasu hosted XXVII th Annual Convention of IAVA