



ISSN (E): 2277- 7695  
ISSN (P): 2349-8242  
NAAS Rating 2017: 5.03  
TPI 2017; 6(11): 840-842  
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www.thepharmajournal.com  
Received: 29-09-2017  
Accepted: 30-10-2017

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## Therapeutic management of juvenile cellulitis in a Labrador retriever puppy

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### Abstract

A 8-week-old Labrador retriever puppy was presented with acute onset of marked facial inflammation and pustular lesions at different body regions. It was diagnosed as Juvenile Cellulitis based on clinical signs and laboratory findings. Treatment included topical corticosteroids and systemic antibiotics. Two weeks after presentation the puppy showed a significant decrease in inflammation and healing pustules. No reoccurrence was seen till to date.

**Keywords:** Puppy, Pustular lesions, Juvenile Cellulitis

### Introduction

Juvenile sterile granulomatous dermatitis and lymphadenitis (JSGDL) also called juvenile cellulitis/ juvenile pyoderma/ puppy strangles is a nodular granulomatous inflammatory disorder of unknown pathogenesis for which no microbial organisms have been identified. It is an uncommon disease of dogs in which 1 to 4 months of age are mostly affected [1-4]. The cause and pathogenesis of the disease are unknown.

Clinical signs of juvenile cellulitis include acute swelling of face, affecting the muzzle, lips and eyelids. A frequent feature is a marked submandibular lymphadenopathy (giving rise to the term puppy strangles). Within 48 hours vesicular, pustular, crusting and serous lesions appear with extensive exudation. Lesions typically form fistulae that drain. The lesions are generally oedematous and other areas involved include the pinnae, with the development of otitis externa, and occasionally the prepuce and anus.

A 8-week-old female Labrador retriever puppy was presented to VCC Rajendranagar Hyderabad with complaint of severe pustular inflammation affecting the skin primarily on the sternum, periocular region, muzzle, inguinal region, and anus (Fig 1). The puppy was treated before presenting to clinic with amoxicillin/clavulanic acid (12.5 mg/kg bodyweight, PO, q12h) for 7 days and the owner reported that the condition of the puppy had remained unchanged. On physical examination, nodules at scapular region and papules on inner ear flap with otitis externa was also noticed. The puppy was alert, responsive and well hydrated. Rectal temperature, heart rate and respiratory rate were within normal range. Blood sample was collected for a complete blood cell count. There was mild raise in neutrophilia (12.3x10<sup>9</sup>/L; reference range, 5.6 to 11.4 x 10<sup>9</sup>/L). Cytological examination of ear swab was negative for ear mites.

### Diagnosis and Treatment

Based on history and clinical examination the puppy was diagnosed with juvenile cellulitis. The puppy was treated with ceftiofur injection at dose of 2 mg/kg body weight s/c with topical application of curable ointment (terbinafine, ofloxacin, ornidazole and clobestal) along with antiseptic dressing for 14 days. Ear canal was cleaned daily with ear cleanser and ofloxacin antibiotic drops were administered for 7 days. By 7 day of treatment slight improvement was seen (Fig 2). Nodules on scapular region ruptured, pustules on perineum region had fistulated and crusted. By day 14 the clinical condition of the puppy began to improve markedly. The puppy became more active and the pustules had begun to resolve. By 4<sup>th</sup> week the lesions around the mouth and other body regions had reduced and the puppy recovered uneventfully (Fig 3).

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### Discussion

Juvenile cellulitis (also known as puppy strangles, juvenile sterile granulomatous dermatitis and lymphadenitis, juvenile pyoderma) is a rare granulomatous and pustular condition that commonly affects the face, pinnae, and submandibular lymph nodes of young puppies [2-6]. The age of onset is generally between 3 weeks and 8 months [2]. Clinical presentation includes fever, lymphadenopathy, and bilaterally symmetric, moist, pruritic lesions in the periocular regions, face, muzzle, pinnae, and sometimes inguinal regions which progress to crusting and alopecia [3]. Examination of the exudate from the pustules reveals pyogranulomatous inflammation with no microorganisms [7]. The condition is responsive to high-dose

corticosteroids which are typically prescribed in conjunction with antibiotics due to the risk of secondary bacterial infection [4]. Rapid and aggressive therapy is recommended in order to maintain a favorable prognosis, to avoid scarring, and to reduce secondary infections. Although the pathogenesis of this condition is not fully understood, due to its responsiveness to corticosteroids, it is thought to involve some degree of immune dysfunction, likely in combination with hereditary components [3-6]. It is suggested that juvenile cellulitis is a systemic condition with primary lymphadenopathy resulting in secondary dermatological lesions [6]. Complete recovery is typical with a low chance of recurrence in affected canines [2].



Fig 1: Cellulitis on sternal and lateral thoracic region on day of presentation



Fig 2: Cellulitis on facial region around the mouth along with otitis externa



Fig 3: Lesions showing progressive healing by 7<sup>th</sup> day of treatment



**Fig 4:** Completely healed lesions on sternum and lateral thorax by 4<sup>th</sup> week of treatment



**Fig 5:** Completely healed lesions on facial region around the mouth by 4<sup>th</sup> week of treatment

#### **Acknowledgements**

We are thankful to Dean, Faculty of Veterinary Sciences of PVNR TVU for providing the financial support to conduct clinical study at Department of Teaching Veterinary Clinical Complex in the University.

#### **Author Contributions**

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