

## A CASE OF JUVENILE CELLULITIS IN A DOG

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**Summary:** Clinical, laboratory and therapeutic results in a dog with juvenile cellulitis are presented. Prominent clinical signs were determined as submandibular lymphadenopathy together with edema, papules, and pustules localized periorcularly, periorally, on the chin and muzzle. In the blood sample taken before treatment, there were anemia, leucocytosis, neutrophilia, and hyperproteinemia. Aspirates from intact pustules were negative for bacterial growth. The dog responded to treatment with cephalexine given at a dose of 22 mg/kg orally twice a day and methylprednisolone at an initial dose of 2 mg/kg orally and subsequently at 1 mg/kg once a day.

**Key Words:** Juvenile cellulitis, Dog.

### Bir Köpekte Juvenil Cellulitis Olgusu

**Özet:** Juvenil cellulitis'li bir köpekte klinik ve laboratuvar bulgular ile sağaltım sonucu sunuldu. Hastada en önemli klinik bulgular olarak submandibular lenfadenopati, çene, burun ucu, göz ve ağız çevresinde ödem, papül ve püstüller belirlendi. Sağaltım öncesi alınan kan örneğinde anemi, lökositozis, nötrofili ve hiperproteinemi belirlendi. Görünümü bozulmamış püstülden alınan aspiratda bakteriel üreme saptanmadı. Günde iki kez, 22 mg/kg dozda cephalexine ve başlangıçta 2 mg/kg, daha sonra 1 mg/kg dozda günde bir kez oral methylprednisolone kullanımı ile olgu başarılı bir şekilde sağaltıldı.

**Anahtar Sözcükler:** Juvenil cellulitis, Köpek.

### INTRODUCTION

Juvenile cellulitis (juvenile sterile granulomatous dermatitis, juvenile pyoderma and lymphadenitis) is an uncommon disease of dogs 1 to 4 months of age mostly affected<sup>1,4</sup>. Although the disorder occurs in different breeds, Golden retrievers, Dachshunds, Labrador retrievers, Pointers, and Gordon setters appear to be predisposed to the disease<sup>3,6</sup>.

The cause and pathogenesis of the disease are unknown. However, it is suggested that juvenile cellulitis appears to be the result of increased susceptibility to infection by *Staphylococcus aureus* and there is an inherited component of the disease<sup>6</sup>.

Clinical signs in juvenile cellulitis include submandibular and prescapular lymphadenopathy, anorexia, fever, lethargy, swollen face (especially the eyelids, lips and muzzle), and pain in all joints<sup>1,3,6,7</sup>. Edema, pustules, papules, and crusts associated with the mucocutaneous junctions of the face, muzzle, and the ears are often noticed<sup>3</sup>. Diagnosis is based on history, physical examination, and results of skin biopsy of early lesions<sup>4</sup>. Reported treatments are glucocorticoids and antibiotics, administered daily until response, then tapered<sup>1,3,8</sup>.

Because the disease is rarely seen, presentation of clinical and laboratory findings and therapeutic response in a dog with juvenile cellulitis may contribute to veterinary practice.

### CASE HISTORY

A forty-day-old, 2.250 kg body weight, male pointer dog was presented to the University of Adnan Menderes, Faculty of Veterinary Medicine, Department of Internal Medicine, with a one week history of a swollen face. The dog was treated with procaine penicillin G plus dihydrostreptomycin sulphate (Penoksal-S; Vilsan) and pheniramine maleate (Avil amp; Hoechst) by the referring Veterinarian, but this treatment did not lead to any significant improvement in the dog's condition. The dog presented to Our clinic for further investigation. No clinical signs were observed in its littermate and routine vaccination was not administered.

On physical examination, body temperature was 39.7°C and heart rate was 148 beats/min. Submandibular and prescapular lymphadenopathy was observed. Edema, papules, pustules, and crusts localized periorcularly, periorally, on the chin and muzzle of this dog were detected (Fig-1). Affected

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skin was painful but not pruritic. Lethargy, anorexia and joint pain (arthritis) was also noted. Additionally, otitis externa was present.



**Figure 1.** Lesions in facial region before treatment in the dog with juvenile cellulitis.

**Resim 1.** Juvenil cellulitisli köpekte fasiyel bölgedeki lezyonun sağaltım öncesi görünümü.

Routine hematology revealed anemia (PCV: %26, hemoglobin concentration: 8.2 g/dl), leucocytosis (20.500 cell/ $\mu$ l), and neutrophilia (1.640x10<sup>3</sup>/ $\mu$ l bands, 13.160x10<sup>3</sup>/ $\mu$ l segmented cells). The serum biochemical analysis showed increased serum total protein concentration (6.08 g/dl) and the highest reference value of serum albumin (2.97 g/dl).

Demodicosis was not observed in examination of skin scrapings and dermatophyte cultures were negative for organisms. *Staphylococcus aureus* and *Klebsiella ozenae* were isolated from a drained lesion<sup>9</sup>. Aspirates from intact pustules were negative for bacterial growth. Cytology of the aspirate pustules revealed many neutrophils without bacteria.

Diagnosis of juvenile cellulitis was made according to the clinical signs, the results of bacterial culturing from intact pustules, and negative findings for demodicosis and fungi.

Cephalexin (Maksipor tablet; Fako) was given at a dose of 22 mg/kg orally twice a day for three weeks. Methylprednisolone (Prednol tablet; Mustafa Nevzat) was also given at a dose of 2 mg/kg in the first three days of cephalexin administration, orally once a day

for 7 days. The dose of methylprednisolone was then reduced to 1 mg/kg daily for 16 days.

Following the three-week treatment with cephalexin and 23 daily methylprednisolone administration, the lymphadenopathy had resolved, although a slight swelling around the eyes was observed. The papules and pustules in the ears had also resolved. However, the papules and crust formation on the muzzle and perioral region continued (Fig-2). Therefore, concurrent treatment with cephalexin and methylprednisolone using the previous dose continued for further 5 days, and clinical condition of the dog resolved completely.



**Figure 2.** The appearance of face contour of the dog with juvenile cellulitis 3 weeks after treatment.

**Resim 2.** Juvenil cellulitisli köpeğin yüz bölgesinin sağaltımdan 3 hafta sonraki görünümü.

## RESULT and DISCUSSION

Juvenile cellulitis is an uncommon acute dermatitis of dog<sup>2,4</sup>. The disease usually affects dogs <4 months old, although, it has been reported in older dogs<sup>1,3,7</sup>. Any breed may be affected, but Golden retrievers, Dachshunds, Labrador retrievers, Pointers and Gorden setters are reported to be more sensitive<sup>4,6</sup>. In the present case, the dog was forty days old, and Pointer.

The cause of juvenile cellulitis is unknown<sup>1,3,6</sup>. Culture results of intact pustules were negative for bacterial growth suggests a nonbacterial cause for this case. It has been reported that in some juvenile



cellulitis cases the lesions become secondarily infected by *Staphylococcus* spp<sup>10</sup>. In the present case, *Staphylococcus aureus* and *Klebsiella ozenae* were isolated from drained lesion. Other authors<sup>5,10</sup> reported that some juvenile cellulitis cases were associated with vaccination and a hypersensitivity of the immune system. However, in this case, the dog had not been vaccinated. In addition, the disease may be hereditary<sup>3</sup>, but no signs of the disease have been observed in the littermates of the case.

Clinical signs reported in juvenile cellulitis are lymphadenopathy (especially the mandibular lymph nodes), swollen face, papules, pustules, and crusts on the lips, muzzle, chin, bridge of the nose and, periocular area, fever, anorexia, lethargy, and otitis externa<sup>3,4,6,11</sup>. The signs of the case reported here are similar.

Some hematological and biochemical variables in dogs show varying values the first eight weeks of life<sup>12,13</sup>. This condition should be considered in interpretation of the laboratory results. Anemia and leucocytosis with neutrophilia were observed in the present case. The findings are consistent with previous report on the hematological changes induced by juvenile cellulitis in dogs<sup>2</sup>. Anemia in the case may be attributed to the inflammatory condition<sup>12</sup>. The leucocytosis with neutrophilia observed is likely the results of an acute inflammation and/or stress-induced corticosteroid discharge<sup>12</sup>. As reported by Jain<sup>12</sup>, increase in serum total protein concentration is probably related with the acute inflammatory condition.

It has been reported that a combination of a cephalosporine (at a dose of 20-30 mg/kg) and glucocorticoid (at a dose of 1-2 mg/kg) is effective in the treatment of dogs with juvenile cellulitis<sup>2,3,14</sup>. In the present case, cephalexin 22 mg/kg orally twice a day for a total of 26 days and methylprednisolone at initial dose 2 mg/kg, and then 1 mg/kg orally once a day for 28 days and the dog recovered completely.

It was concluded that juvenile cellulitis should be considered in differential diagnosis of skin diseases in dogs <2 months old that have lymphadenopathy (mandibular and prescapular), edema, papules, pustules, or crusts around the face and ears. The combination of cephalexin and methylprednisolone was effective in the treatment of a dog with juvenile cellulitis.

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