STUDIES ON PAN-OSTEITIS IN DOGS

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Pan-osteitis is a disorder usually seen in 5 to 8 month old dogs, occurring suddenly and with no history of trauma, characterized by a gradually increasing intermittent lameness and switching of this lameness from one leg to another (Piermattei and Flo, 1997; Ozer et al., 1997).

Radiological findings greatly assist in the differentiation of pan-osteitis from other diseases and lamenesses seen in large breeds. As a rule, these findings continue longer than clinical symptoms (Elma, 1997). There are 3 phases in pan-osteitis, which can be separated radiologically. These phases are: early phase, middle phase, and late phase (Rosh, 1994; Piermattei and Flo, loc. cit.).

Materials and Methods

The material of the study comprised of 28 dogs brought to the surgery department with a complaint of lameness in the forelimb or the hind limb.

After detailed history, physical examination was done and affected extremities were radiographed. Blood samples from the positive case of pan-osteitis were subjected to the determination of leucocyte counts and haemogram.

Twenty-three dogs with pan-osteitis were treated with acetyl salicylic acid (Aspirin 10-20mg/kg), no medical treatment was given to 5 dogs. In order to prevent possible damage to the stomach, aspirin was given together with an H2-antagonist famotidin. Patient owners were advised to feed their dogs on low-protein and low-calorie food and also to limit their activity. Cases were followed-up by periodic radiographic and physical examinations.

Results and Discussion

Distribution of the cases according to breeds was: 21 German Shepherds, 4 Anatolian Sheepdogs, 1 St. Bernard, 1 Great Dane and 1 Mixed German Shepherd.

In the radiographic appearances, it was determined that 7 of the patients were in the early phase, 13 in the middle (Fig.1) and 6 in the late phase. (Fig. 2). In the remaining 2 cases the lesion was in more than 1 bones as well as being in different phases. As the lameness in pan-osteitis mostly exhibits an intermittent pattern, this causes the patient owner to think that the lesion will pass off spontaneously and so delay them bringing the patients into the clinic. In some cases the lesion is seen in
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Fig. 1 - Radiographic appearance of middle phase lesion in the form of a stain in pan-osteitis in the proximal ulna (A) in a 9-month-old German shepherded dog and appearance of the completely recovered ulna 18 month later (B).

Fig. 2 - Appearance of density all along the radius due to panosteitis and thickening in the periosteum in a 7-month-old German shepherd dog more than one bone and in different phases.

It was learned that the patients had been brought to the clinic within 4-20 days after start of lameness. There was no parallel relationship between the severity of the lameness and radiological findings. However, there was correspondence between pain formed on palpation and the panosteitis appearance on radiographs. In cases where the pain was very severe and spread over the whole bone, it was seen that the bone marrow had been greatly affected and there was thickening in the endosteum and periosteum (Fig. 2).

The ages of cases varied between 3.5 to 16 months. It has been reported that (Piermattei and Flo, 1997; Sebestyen, 1998) pan-osteitis is usually seen in the 5 to 18-month old period and very rarely it can be seen in puppies up to 2-months old (Manley and Romich, 1993). The fact that one of the patients was 3-5-months old and that the lesion was seen in several bones and in all the extremities was interesting.

Etiology of the disease is not completely known (Muir et al., 1996; Ozer et al., 1997; Sebestyen, loc. cit.). In a study, Schwalder et al., (2002) suggest a possible cause of pan-osteitis to be food...
rich in protein and high in calories. Owing to its osmotic effect, excessive protein accumulation causes intraosseal oedema. In the anamnestic obtained from patient owners, 12 of the cases were seen to be fed meat products, 5 high protein (25-28%) commercial pet food and 11 food leftovers. This supports above statements. However, there was no pan-osteitis in the littermates of 3 of these cases, that were fed the same diet.

As a result of clinical and radiological examinations, pan-osteitis was determined in a total of 39 long bones belonging to 28 dogs. While it is stressed that (Manley and Romic, loc. cit.), pan-osteitis occurs mostly in the ulna, in the cases in this study the humerus was the most affected (16), followed respectively by the ulna (13), radius (5), tibia (4) and femur (1). While the lesion was limited to around the nutritional foramen in some cases (Fig. 1), it had covered all the bone marrow in some others (Fig. 2).

It has been reported (Muir et al., loc. cit.; Piermatei and Flo, loc. cit.) that some cases recover spontaneously and that in some cases the lameness disappear with administration of non-steroids. Lameness was seen to disappear 3-15 days after drug administration in 23 of the patients and 20-45 days after the start of the disease in 5 cases that had not been treated. However, lameness recurred in the untreated 5 cases. In the cases where pan-osteitis was cured spontaneously, we think that dietary changes and resting positively influenced recovery.

**Summary**

After clinical and radiological examinations pan-osteitis was diagnosed in 39 long bones belonging to a total of 28 dogs. Humerus was seen to be the most affected bone and was followed in decreasing order by the ulna, radius, tibia and femur. 23 dogs with pan osteitis were effectively treated with aspirin. It was concluded that excessive protein diets can play a role in the etiology of this disease.

**REFERENCES**


