



Always consult with a veterinarian that you feel comfortable with before diagnosing or treating any disease on your own. This information is for reference only.

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Craniomandibular Osteopathy

Issue Description

A developmental disease in dogs causing extensive bony changes in the mandible and skull. In this disease there is a cyclical resorption of normal bone and replacement by immature bone along the inner and outer surfaces of the affected bones. It usually occurs between the ages of 3 and 8 months. Breeds most commonly affected include the West Highland White Terrier, Scottish Terrier, Cairn Terrier, and Boston Terrier. It is rare in large breed dogs, but it has been reported.

Other Names

CMO, Mandibular Periostitis, Temporomandibular Osteodystrophy, Lion's Jaw, Westie Jaw, Scottie Jaw

Symptoms

Symptoms include firm swelling of the jaw, drooling, pain, and difficulty eating. It is an inherited disease, especially in Westies, in which it has been recognized as an autosomal recessive trait. Canine distemper has also been indicated as a possible cause, as has E. coli infection, which could be why it is seen occasionally in large breed dogs. Growth of lesions will usually stop around the age of one year, and possibly regress. This timing coincides with the normal completion of endochondral bone growth and ossification. If the disease is extensive, especially around the tympanic bulla (middle ear), then the prognosis is guarded.

Diagnosis

The disease is most often diagnosed by clinical signs and palpation with definitive confirmation by lateral and/or ventral/dorsal radiographs of the skull, depending on the location of the specific lesion. All board-certified radiologists can diagnose the disease, as can many other experienced veterinarians.

Treatment

CMO is treatable. Depending on the severity, the amount of medication and length of treatment vary. Four to ten months is the average length of treatment.

Many affected puppies will require some dose of cortisone until they are 10 months or older. Most anti-inflammatory drugs work well, but since CMO may require long-term therapy, veterinary advice is essential. Puppies nearly always recover. In severe cases, tube feeding may be required during appetite loss to support nutrition. The disease can be controlled by corticosteroid therapy and buffered aspirin (pain). When treated, the bony swelling often recedes, but some enlargement and impaired chewing may continue for the rest of the dog's life.

Affected dogs should not be used for breeding, even if they appear to recover completely. Breeding of parents (carriers) and siblings (suspect carriers) should also be avoided. The Institute for Genetic Disease Control in Animals (GDC) and the Orthopedic Foundation for Animals (OFA) maintain registries for this condition in terrier breeds.

People seeking purebred terriers, especially West Highland white terriers, should question breeders carefully about the occurrence of the disorder in any lines, as CMO is inherited in Westies, and is believed to be inherited in Scottish terriers as well. Optimal treatment for your pet requires a combination of home and professional veterinary care, with good rest on comfortable dog crates. Follow-up can be critical, especially if your pet does not rapidly improve. Administer all prescribed medication as directed. The disease often stops progressing around 11 to 13 months of age, and then may regress partially or completely.

Imaging

- Radiographs of the skull show uneven, bead-like osseous proliferation of the mandible or tympanic bullae (bilateral); extensive, periosteal new bone formation (exostoses) affecting one or more bones around the TMJ. Fusion of the tympanic bullae and angular process of the mandible may occur.
- CT scan may be useful in evaluating the osseous involvement of the TMJ.

Other Diagnostic Procedures

- Biopsy necessary only in atypical patients.
- Bone biopsy reveals normal lamellar bone being replaced by an enlarged coarse fiber bone and osteoclastic osteolysis of the periosteal/subperiosteal region. The bone marrow is replaced by a vascular, fibrous-type stroma. Inflammatory cells occasionally can be seen at the periphery of the bony lesion.

Follow-Up

- Prognosis dependent on involvement of bones surrounding the TMJ.
- Frequent rechecks are mandatory to ensure adequate nutritional balance and pain control.
- Pain and discomfort may diminish at skeletal maturity (10-12 months of age), and the exostoses may regress.
- Elective euthanasia may be necessary.
- Dam/sire breedings that result in offspring with CMO should not be repeated.
- Breeding of affected animals is to be discouraged.

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