

# ANIMAL MATTERS: Tips & Treatments



Michigan Veterinary  
Specialists<sup>sm</sup>

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## SURGERY:

### Rheumatoid Arthritis

#### Definition

Canine rheumatoid arthritis (RA) is a rare, slowly progressive, non-infectious, erosive disease of the joints. It affects middle to older-aged, small or toy breed dogs and is characterized by a shifting leg lameness with associated soft tissue or joint-related swelling. The underlying cause remains unknown, but is felt to be related to the deposition of autoimmune complexes in the synovial lining which initiates the inflammatory cascade leading to villous hypertrophy and pannus formation on the cartilaginous surface of the joints. With time inflammation interferes with normal joint health, leads to destruction of the subchondral bone, weakening of the ligaments supporting the joints and joint instability.

#### Signs and symptoms

Most of the time dogs will present with stiffness and lameness after rest which may appear to shift to different legs on a daily basis. Physical examination may reveal that there is swelling in the same joint on both of the front or back legs. As the disease progresses, deformity of involved limbs may be observed as the ligamentous structures of the joints are affected. Dogs that once had normal alignment of the limbs may develop valgus or varus deformities, may develop hyperextension in multiple joints, or may suffer significant ligamentous injuries with minimal trauma. Animals suffering from RA may exhibit other signs of illness including anorexia, lethargy, peripheral lymphadenopathy, and hyperthermia (fever), thus an extensive diagnostic work-up is recommended.

#### Diagnostic tests

Rheumatoid arthritis is a complex disease and requires that a number of characteristics be fulfilled. This is important because early RA can be confused with other disease processes including arthritis (septic or non-septic), degenerative joint disease, and inflammatory polyarthropathy. Diagnostic tests such as radiographs, joint fluid analysis, and synovial biopsies are the most helpful at definitively diagnosing RA.

Radiographs and joint biopsy samples must be interpreted with caution early in the course of RA. Although advanced cases of RA may have a unique radiographic erosive destruction of bone at the joints, early radiographic findings are relatively non-specific showing joint effusion and soft tissue swelling. As the disease progresses, joint spaces may either collapse or widen depending on the condition of the surrounding structures and the size of the joint, osteophytes can develop because of instability of the joint, and muscle atrophy can occur which may muddle the diagnosis. Destruction of subchondral bone can mimic lysis of bones making these small cystic areas look like bone tumors. Just as radiographs can mimic other joint diseases, synovial biopsies may show a villous hyperplasia which is not unique to rheumatoid arthritis.

## Diagnosis

### **Rheumatoid Arthritis Criteria:** (must meet 7 of 11)

- Stiffness after rest
- Pain in at least 1 joint
- Swelling in at least 1 joint
- Swelling of at least 1 other joint in 3 months
- Symmetric joint swelling
- Subcutaneous nodules over bony prominences, or extensor surfaces of articular regions
- Destructive radiographic lesions
- Positive rheumatoid factor serum test (titer > 1:8)
- Poor mucin content from synovial fluid
- Characteristic histopathologic changes in synovial membranes
- Characteristic histopathologic changes in subcutaneous nodules

## Treatment

The reason that the diagnosis of RA must be correct centers on the fact that it is a condition that is not easy to treat. Immunosuppressive drugs such as steroids, cyclophosphamide (Cytoxan), azathioprine (Imuran), or combinations of these drugs have been used in attempt to halt the inflammatory process with variable results. In most cases, the disease continues to progress despite treatment, however the institution of some immunosuppressive therapy may help to slow the process. Overall, the long term prognosis for any patient diagnosed with rheumatoid arthritis is poor.

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Michigan Veterinary Specialists has board-certified surgeons at the Auburn Hills and Southfield locations. A member of the surgery team is on-call 24/7 to provide consultations to MVS emergency doctors and to perform the emergency services for patients seen by the MVS emergency service. Our surgeons are available for questions and consultations on surgical conditions during the weekdays.

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