Perianal Fistula & Cyclosporine

A clinically challenging disease that particularly affects German shepherds, perianal fistula (anal furunculosis) is characterized by inflammation, ulceration, and development of cutaneous sinuses or fistulae within perianal tissues. The condition has been treated with surgery in the past, but it often recurs. More recently, this disorder has been treated using cyclosporin A, a potent immunosuppressive agent, which suggests an immune-mediated component, although that remains unproven. Similarities between the lesions of Crohn’s disease in humans and perianal fistula in dogs suggest that these conditions share a pathogenesis and are associated with a T-helper, type-1 pattern of cytokine expression. In this study, tissue biopsies were taken from lesions in 15 dogs (11 German shepherds, 1 border collie, 1 Leonburger, 1 Staffordshire bull terrier, and 1 crossbreed) and biopsies of healthy anal tissue were taken from 24 control dogs (12 healthy surgical patients and 12 beagle colony dogs). Because of the lack of reagents for determining the level of canine cytokine proteins in these lesions, samples were examined using reverse-transcriptase PCR with canine cytokine-specific primers and a semiquantitative multiplex PCR assay.

High levels of cytokine mRNA were found in biopsies from 11 of the 15 affected dogs; otherwise, there were no obvious differences between the animals other than breed (only 1 in 24 of the controls exhibited the same pattern of cytokine mRNA). The pathogenesis may be associated with a T-cell–mediated inflammatory response, but the mechanism is unclear and remains to be investigated.

COMMENTARY: Treatment of perianal fistula has moved from the surgical to the medical arena in recent years with the realization that the disease can be treated with cyclosporine. The high levels of expression of cytokine mRNA in the lesions of dogs reported in this study suggest that the pathogenesis of the disease might be associated with a T-cell–mediated inflammatory response and could explain why treatment with cyclosporine can be successful.—Colin F. Burrows, BVetMed, PhD, MRCVS, Diplomate ACVIM