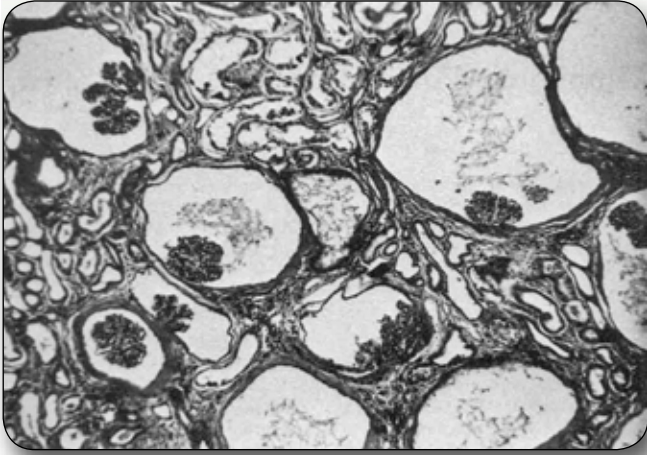


Polycystic Kidney Disease

By Vetbook



Glomerular polycystic kidney disease in an 11-month-old blue merle Collie^[1]

Polycystic kidney disease is an autosomal-dominant genetic disease of dogs characterised by renal and occasionally liver cysts^[2].

This disease has been reported as a breed-specific syndrome in West Highland White Terrier and Staffordshire Bull Terrier^[3], with affected dogs heterozygous for the condition^[4], with concurrent heightened risk of mitral valve endocardiosis, left ventricular outflow obstruction and other cardiac abnormalities^[5].

A similar condition has been reported in Golden Retrievers^[6], Blue Merle Collie^[1] and West Highland White Terriers^[7] where polycystic kidney disease is associated with congenital biliary cysts of the liver.

Other breeds have been reportedly affected, including the Shiba^[8] and Belgian Shepherd^[9].

Many dogs are subclinically affected, but homozygous patients may present at a young age (6 months or older) with clinical signs referable to chronic renal disease, consisting of lethargy, dehydration, vomiting and in severe cases, seizures^[10]. Polyuria and polydipsia are commonly observed, with urinalysis usually revealing hyposthenuric urine with evidence of albuminuria.

Diagnosis is based on breed-predisposition, blood tests (which usually reveal hyponatremia, hyperkalemia and variable non-

regenerative anemia) and ultrasonographic findings^[11].

Cysts can be detected using renal ultrasonography, the currently preferred method of diagnosis for this disease, allowing breeders to diagnose disease prior to breeding, and thus prevent breeding of affected animals^[12].

Renal cysts are usually bilateral, occur in cortex and medulla and vary in size from less than 1 mm to over 2.5 cm in diameter.

Histologically, cysts are lined with epithelial cells of nephron origin and associated with this is renal tubular loss and dilation as well as interstitial inflammation and fibrosis^[13].

A definitive diagnosis requires DNA testing using PCR analysis^[14].

A differential diagnosis would include renal dysplasia, renal cystadenoma associated with dermatofibrosis, renal amyloidosis and Fanconi's syndrome^[15].

There is no specific treatment for this condition and some dogs may remain clinically stable for years prior to onset of terminal renal failure.

Testing of potential carriers is recommended to eliminate transmission of this hereditary condition.

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