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A PORTOSYSTEMIC SHUNT IN A DOG: HAS ITS TREATMENT CHANGED?

A congenital portosystemic shunt (CPSS) is an abnormal connection between the portal and the systemic venous circulation bypassing the liver. Although both medical and surgical treatment can contribute to long-term survival with a good quality of life, surgical closure is the preferred treatment in dogs with CPSS.⁽¹⁾ Medical treatment results in clinical and biochemical improvement, and such improvement is a prerequisite to stabilize an animal with CPSS before surgery. Surgical treatment of a CPSS preferably results in complete closure of the shunt. When complete closure is not feasible because of portal hypertension (50-80%), CPSSs are either partially closed by ligation, sometimes followed by complete ligation in a second procedure, or closed by gradual closure techniques. Because evidence is lacking regarding preferable techniques⁽²⁾, prospective randomised trials are essential to define which technique is associated with the best outcome in the various types of CPSS and will support choices in surgical technique in the near future. Related research questions that also are pivotal in the treatment of individual CPSS cases are: what outcome do we want to achieve in dogs with CPSS? And which dog is actually helped with surgical shunt attenuation? Studies to determine the preferred treatment of a disease obligate researchers to define the desired outcome after treatment. Do we need complete resolution of all portosystemic shunting or do we strive for complete clinical recovery with a good long-term prognosis? There is a limited number of studies reporting long-term follow up after surgical attenuation. Furthermore, the clinical importance of persistent shunting is unclear, unless overt clinical signs are present, and complete closure of a CPSS does not warrant complete normalisation of hepatic function.⁽³⁾ Therefore, in a recent multicentre study a standardized questionnaire was designed and was also used in cases from our institution to assess clinical signs and their impact on quality of life before and after CPSS attenuation. Long-term clinical performance in dogs with attenuated shunts was compared with healthy dogs. Not all shunt dogs returned to normal, which suggests that mild signs may persist, despite apparently successful treatment (Bristow *et al*, submitted for publication). However, the quality of life in shunt dogs after treatment was assessed to be better by their owners than in the group of healthy dogs.

With all shunt closing techniques, recovery from portosystemic shunting after attenuation of the shunt in an individual dog used to be rather unpredictable. Our aim is to help owners and clinicians treating dogs with CPSS to decide when surgery is the preferred treatment in an individual dog. Therefore, in a recent study at Utrecht University, a predictive model was constructed based on plasma albumin concentration and hepatic expression of three genes (DHDH, ERLEC1, and LYSMD2) that was accurate to predict recovery from portosystemic shunting after shunt ligation in dogs⁽⁴⁾ Planned studies aim to develop less invasive ways to measure predictive gene expression, for example in peripheral venous blood samples, to improve practical applicability of this tool in the future.

References

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