

SURVIVAL IN DOGS AFFECTED BY SEVERE AND MODERATE PULMONIC STENOSIS: EFFECT OF PULMONARY BALLOON VALVULOPLASTY

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Pulmonic stenosis (PS) is one of the three most common congenital heart defects in dogs. Pulmonary balloon valvuloplasty (PBV) is the treatment of choice for valvular PS as in humans as in dogs. It is recommended that dogs with severe PS (Doppler gradient (DG) > 80 mmHg) should be treated, but no guidelines have been published for moderate PS (DG 50-80 mmHg). Few studies compared the survival in dogs undergoing the PBV with those that did not (NPBV), mostly including dogs with severe PS.

The aim of this retrospective study was to document the effects of PBV on survival in a larger population of dogs than previously published affected by moderate and severe PS and compare survival times in dogs that undergoing PBV with NPBV.

Medical records from 1997 to 2008 were searched for dogs with diagnosis of moderate or severe PS (DG > 50 mmHg) and a long-term follow-up (>6 months) available. Owners, referring veterinarians or both were contacted to obtain information about the current status of each animals and/or echocardiographic controls not performed in our clinic. A log rank test was used to determine whether a significant difference existed between the two groups (PBV and NPBV) and Kaplan-Meier method was used to display survival curves. Multivariate Cox proportional hazard analysis was performed to determine any association between time to cardiac related death and PBV, after adjusting for potential risk factors including pulmonary DG, PS severity (severe vs moderate), sex, age and symptoms at presentation.

197 dogs were included in the study: 101 underwent PBV and 96 did not. 74% of dogs showed severe PS, while 26% moderate PS. In the PBV and NPBV groups respectively severe PS affected 83% and 64% of dogs and moderate PS 17% and 36% of dogs. Most of the dogs were asymptomatic at presentation (77%): 83% in the PBV group and 71% in the NPBV group.

Survival analysis (log rank) showed a significant difference between PBV and NPBV groups (better life expectancy in PBV group, $p=0.03$). Multivariate Cox proportional hazard analysis showed that treatment, PS severity and symptoms are risk factors affecting the survival. PBV and moderate PS groups were associated with a significant greater duration of survival (HR=0.5, $P=0.03$ and HR=0.39, $p=0.02$ respectively). Whereas symptomatic dogs at presentation had a 2.3 fold increase of risk of death ($p=0.01$).

In conclusion we documented that PBV had a significant protective effect on survival in dogs with moderate and severe PS. Moreover PS severity and symptoms at presentation affect the survival.

