

VII. Summary

The portosystemic shunt in the dog- a retrospective study

The portosystemic shunt in dogs is a congenital anomaly of the portal vein system and occurs particularly often in young dogs. Thoroughbreds have a predisposition for the condition.

In the following study a total of 56 dogs with suspected portosystemic shunt were examined in the Clinic for Small Animals of the Free University in Berlin in the period between 1981 and 1996.

60,7 % belonged to small, 10,7 % to middle and 28,6 % to large breeds.

Yorkshire Terriers were the most common breed. The average age was 1.4 years.

Portosystemic shunts were divided into intrahepatic and extrahepatic shunts. There were three types of extrahepatic shunt, the portocaval shunt, the portoazygos shunt and the portophrenico shunt.

Intrahepatic shunts were found in 17 dogs of mostly large breeds (30,4 %). In 12 dogs the shunt was located in the left lateral liver lobe according to the ductus venosus. In one dog the shunt was found in the medial liver lobe. A shunt located in the right lateral liver lobe was diagnosed three times. Extrahepatic shunts were found in 39 dogs of mostly small breeds (69,6 %). 29 (74,4 %) of them had a portocaval shunt, seven (17,9 %) a portoazygos and three (7,7 %) a portophrenico shunt.

The most common nonspecific clinical signs were gastroenteric signs such as vomiting and diarrhoea or urinary tract disorders like polyuria/polydipsia. Neurological abnormalities were primarily aimless wandering, apathy and seizures. Nine dogs (16,1 %) showed nonspecific symptoms only, six dogs (10,7 %) suffered from neurological disorders. Most of the dogs (73,2 %) showed both neurological and nonspecific signs.

Biochemical screening tests showed a high serum ammonia level, low urea concentration and low total protein concentration.

Plain radiographs of 59,2 % of the patients revealed a small liver. With the radiographic contrast imaging of the portal venous system the shunt was outlined. The shunt type could be differentiated into intra- or extrahepatic. Furthermore it was possible to show if there was a portal circulation and if there were additional vessels.

In 26 % of the patients (n = 13) the shunt was completely ligated in the first operation, in 74 % (n = 37) it was only attenuated. In further operations it was possible to close the shunt completely in 12 more dogs. In total, the shunt was ligated in 50 % of all cases. The degree of attenuation was measured using the portal pressure and the visualisation of a portal circulation.

Surgical complications of shunt ligation included portal hypertension (n = 6), haemorrhages from the shunt (n = 4) or adhesions because of previous operations (n = 1).

During operation or hospitalization 12 dogs (21,8 %) were euthanized or died.

In a period of time stretching from seven days to eight and a half years 33 follow-up checks were made. 19 patients had no symptoms. Only 14 dogs showed slight symptoms. The laboratory findings improved a lot. In 54 % the ammonia concentration decreased, in 46 % we noticed an increase in the total protein concentration and 32 % showed an increase in urea concentration. Plain radiographs of 14 patients showed an increased hepatic mass.

The surgical management of the portosystemic shunt with the complete ligation of the shunt could be classified as having positive prognoses. Our results prove that in 78% of all cases good longterm results can be expected.