Lipogranulomas and pigment granulomas in livers of dogs with portosystemic shunt

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Abstract

Lipogranulomas are lesions found in histopathological liver examination in humans and in various animal species, including dogs, especially those with portosystemic shunts. They consist of macrophages and other inflammatory cells, and sometimes they contain iron salts (pigment granuloma). This study aimed at determining the number of granulomas and cellular composition of lipogranulomas in dogs with the congenital extrahepatic portosystemic shunt, and to identify factors associated with their development. 44 archival liver samples from dogs with portosystemic shunt were stained using HE, Perl’s method and – in randomly-selected cases – immunohistochemically against CD56, CD20 and CD3 (DAKO). A reduction in the size of the liver was observed in all dogs during laparotomy, and the diameter of the vessel circumventing the liver was also measured (in 24 dogs). Lipogranulomas were found in 52.3% of samples; iron salts were present in 47.8% of them; 72% of cells in lipogranulomas were macrophages. In lipogranulomas both types of lymphocytes – T and B – were seen. The presence of lipogranulomas in liver samples in dogs was connected with fatty degeneration of hepatocytes and was correlated with the age of animals and with the diameter of the abnormal vessel circumventing the liver. Their formation appears to be triggered by severe ischemia and shortage of nutrient supply.

Key words: lipogranuloma, pigment granuloma, liver, portosystemic shunt, dog