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## Evaluation of Phagocytic Function of The Spleen After Splenic Artery Ligation in Secondary Hypersplenism

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**Abstract:** The aim of this study was to investigate the effects of splenic artery ligation on the phagocytic functions and morphology of the spleen in rabbits in which secondary hypersplenism was induced by splenic vein ligation (SVL). Thirty New Zealand-type rabbits were included in this study. The rabbits were separated into three groups of 10 subjects each. The first group underwent laparotomy, and the second and third groups underwent laparotomy + splenic vein ligation. At the end of the fourth week, the first and second groups underwent laparotomy while the third group underwent laparotomy + splenic artery ligation. At the end of the eighth week, 1 cc of blood was taken from all rabbits to determine hematological parameters. The rabbits were administered with 0.1 mCi/kg of Tc-99m sulfur colloid, and retention rates in the liver and spleen were determined. The spleens of the rabbits were removed and examined histopathologically. Median liver/spleen retention rates were found to be 26.2 count/pixel in the sham group, 29.1 count/pixel in group II and 55 count/pixel in group III. The retention rate in the spleen was significantly lower in group III ( $p = 0.0001$ ). Leukocyte levels were similar among the groups while erythrocyte and thrombocyte levels were significantly lower in group II than in the other two groups ( $p = 0.0001$ ). Histopathologically, wide congestion was observed in group II while extended fibrosis and necrosis were observed in the spleens of group III. Although the application of SAL in secondary hypersplenism cases reduces the severity of hypersplenism, it fails to improve the phagocytic function of the spleen.

**Key Words:** Hypersplenism, Splenic vein ligation, Splenic artery ligation, Phagocytosis, Fibrosis

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