

Hepatoportoenterostomy in Selective Obstructive Cholestasis – An New Experimental Model in the Rat

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Abstract

Backgrounds: Biliary atresia is the most frequent cause for neonatal obstructive cholestasis. Hepatoportoenterostomy (HPE) is the only method allowing survival until liver transplantation. For a maximum rate of success, the HPE procedure has to be performed within the 60 days of life. We aimed to create an experimental model for relieving obstructive cholestasis.

Methods: In 20 Wistar rats selective bile duct obstruction was induced by the microsurgical ligation of the bile ducts corresponding to the median and left lateral liver lobes. After four weeks surgical re-intervention was carried out and HPE was performed microsurgically on the hilum of the median and left lateral liver lobes. One week after HPE, the integrity of the anastomosis and the hepatic changes were assessed.

Results: The survival rate throughout the study was 90%. The surgical re-intervention revealed hepatic-hilum adhesions, with fibrosis. Microscopically, an initial fibrogenic repair was identified, equivalent of moderate cholestasis. After the HPE, there was no bile leak from the anastomosis and no biliary peritonitis. The evolution was marked by a reduction in food intake.

Conclusions: The experimental model we propose for the HPE is reliable by using microsurgical techniques. Based on it, one can study the changes induced by the bile duct obstruction.

Key words: biliary atresia, biliary drainage, cholestasis, experimental, portoenterostomy