

Experimental study of total hepatoduodenal ligamentectomy for the patients with hepatic hilar carcinoma

メタデータ	言語: jpn 出版者: 公開日: 2022-11-25 キーワード (Ja): キーワード (En): 作成者: Ueno, Keiichi メールアドレス: 所属:
URL	https://doi.org/10.24517/00067204

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1991 Fiscal Year Final Research Report Summary

EXPERIMENTAL STUDY OF TOTAL HEPATODUODENAL LIGAMENTECTOMY FOR THE PATIENTS WITH HEPATIC HILAR CARCINOMA

Research Project

Project/Area Number

01570749

Research Category

Grant-in-Aid for General Scientific Research (C)

Allocation Type

Single-year Grants

Research Field

Digestive surgery

Research Institution

KANAZAWA UNIVERSITY

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Project Period (FY)

1989 - 1991

Keywords

HEPATIC HILAR CARCINOMA / HEPATIC ARTERIAL LIGATION / TOTAL HEPATODUODENAL LIGAMENTECTOMY / PARTIAL ARTERIALIZATION OF THE PORTAL VEIN / HEPATIC BLOOD FLOW / BLOOD PUMP FOR EXTRACORPOREAL CIRCULATION

Research Abstract

Total hepatoduodenal ligamentectomy for hepatic hilar carcinoma can increase curability. This procedure includes resections of the hepatic artery and the portal vein. However, the incidence of postoperative complication is very high. For preventing these postoperative hepatic failures, we instigated the use of partial arterialization of the portal vein during and after the operation. This procedure was first performed on dogs in 1989. Partial arterialization of portal

vein effectively preserved the liver function during the operation and in the early period (3 hours) after dissection of the hepatic artery. In 1990, we could preserve the liver function for up to 12 hours after dissection. Both in 1989 and in 1990 we employed use of a mechanical biopump (extracorporeal circulation system) to exact circulation. In the final year of this project, 1991, we improved the efficacy of partial arterialization of the portal vein by using a 9-Fr urokinase immobilized catheter between the intrahepatic portal vein and the femoral artery. The bypass flow was about 100 ml/min. In 1989 we proved that 100 ml/min was the optimum flow to maintain liver function. This catheter maintained hepatic flow and hepatic oxygen supply for 7 days. Serum transaminase level increased temporary but normalized after 7 days. Energy charge in hepatic tissue stayed in the normal range. Finally we proved the efficacy of partial arterialization of the portal vein for countermeasuring postoperative failure after total hepatoduodenal ligamentectomy.

Research Products (6 results)

All Other

All Publications (6 results)

[Publications] 前田 基一: "動脈遮断肝に対する部分的門脈動脈血化の有効性に関する実験的研究" 日本外科学会雑誌. 92. 697-706 (1991) ▼

[Publications] 中野 泰治: "動脈遮断肝における部分的門脈動脈血化法の長時間維持に関する実験的研究" 金沢大学十全医学会雑誌. 101. 873-881 (1992) ▼

[Publications] 中野 達夫: "動脈遮断肝に対する部分的門脈動脈血化法の検討—ウロキナーゼコーティングカテーテル装着法の有用性について—" 金沢大学十全医学会雑誌. 101. 882-896 (1992) ▼

[Publications] Kiichi Maida: "EXPERIMENTAL STUDY OF PARTIAL ARTERIALIZATION OF THE PORTAL VEIN ON THE DEARTERIALIZED LIVER" J.Jpn. Surg. Soc.92. 697-706 (1991) ▼

[Publications] Yasuharu Nakano: "EXPERIMENTAL STUDY OF LONG TERM MAINTENANCE OF PARTIAL ARTERIALIZATION OF THE PORTAL VEIN IN ARTERY LIGATED LIVER" J. Juzen Med. Soc.101. 873-881 (1992) ▼

[Publications] Tatsuo Nakano: "THE EFFECT OF PARTIAL ARTERIALIZATION OF THE PORTAL VEIN USING UROKINASE IMMOBILIZED CATHETER BYPASS BETWEEN THE FEMORAL ARTERY AND THE PORTAL VEIN ON THE DEARTERIALIZED LIVER" J. Juzen Med. Soc.101. 882-896 (1992) ▼

URL: https://kaken.nii.ac.jp/report/KAKENHI-PROJECT-01570749/015707491991kenkyu_seika_hokoku_

Published: 1994-03-17