



To develop an implantable port in which a microcatheter can be inserted for a combination therapy of repeated transarterial chemoembolization (TACE) and hepatic arterial infusion chemotherapy (HAIC) for advanced liver cancer” Fukuoka et al (2018).

Abstract:

PURPOSE: To develop an implantable port in which a microcatheter can be inserted for a combination therapy of repeated transarterial chemoembolization (TACE) and hepatic arterial infusion chemotherapy (HAIC) for advanced liver cancer.

MATERIALS AND METHODS: The design of a currently used implantable port was modified. A funnel part was constructed in the port. The septum was punctured by a 20-gauge indwelling needle, and 2.0-Fr non-tapered microcatheter was inserted into the port. In the in vitro studies, the advance of a microcatheter out of the funnel part was evaluated via seven different septum puncture sites. A 5-Fr indwelling catheter connected to the port was placed in a vascular model, and a microcatheter catheterization was evaluated. In an in vivo study, the port-catheter system was implanted in the hepatic artery in a pig. A microcatheter was percutaneously inserted through the port into the hepatic arterial branches, and embolization was performed.

RESULTS: In the in vitro studies, the microcatheter was smoothly advanced out of the port and catheterizations into the hepatic arteries were successful via all septum puncture sites. In the in vivo study, repeated selective embolization through the port was successfully conducted on 7, 14 and 21 days after the implantation.

CONCLUSION: The developed implantable port can be used for repeated catheter insertion into the hepatic artery. The combination of repeated TACE and HAIC could be possible using this device.

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Reference:

Fukuoka, Y., Tanaka, T., Nishiofuku, H., Sato, T., Masada, T., Tatsumoto, S., Marugami, N., Sakaguchi, H. and Kichikawa, K. (2018) Development of Repeatable Microcatheter Access Port for Intra-arterial Therapy of Liver Cancer. Cardiovascular and Interventional Radiology. November 2nd. .

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