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Transaxillary Access to Perform Hepatic Artery Infusion (HAI) for Secondary or Primitive Hepatic Tumours

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HEPATIC ARTERY infusion (HAI) to effect regional chemotherapy for metastases of colorectal cancer was first used at the beginning of 1980 with unexpected findings in terms of responses related to systemic chemotherapy. However, various trials have not been able to demonstrate a definite improvement in survival [1–5].

Recently, new clinical studies with new therapeutic protocols (HAI, HAI + systemic chemotherapy) [6–11] and new proposals to use HAI as an adjuvant or neoadjuvant [12–14], either in surgical or cryosurgical treatment, have renewed interest in this form of treatment for hepatic neoplasia and in particular, for hepatic metastases of colorectal tumours.

One of the main obstacles to the use of HAI is the fact that, in cases of metachronous metastases (the majority), regional chemotherapy is only possible after surgical intervention to isolate the gastroduodenal artery and the positioning of the tip of the catheter of the Port in the hepatic artery, with consequential creation of a subcutaneous pocket containing the Port. Based on the preliminary work of Japanese authors from the University of Chiba [15], who conceived the introduction of their own catheter coated with heparin on slow

release, accessed by the left axillary artery and using a subcutaneous Port (carried out under local anaesthesia), we have conceived a system of introduction similar to theirs for the use of HAI, but using catheters already on the market for others uses.

Before the intervention, the patients were subjected to sonography of the superior and inferior abdomen and of the thorax, scintigraphy of the bones, colonoscopy, a CT-scan with arteriography, all to exclude extrahepatic localisations of the neoplasm with consequential contra-indication to HAI, and to have a radiologically clear view of the flow of the hepatic artery that usually presents anatomical variations in some patients.

Our catheters and the Ports were implanted under local anaesthesia. The left axillary artery was punctured laterally approximately 2 cm from the border of the first rib with the help of colour doppler ultrasonography to avoid further puncturing of the same artery. After a suitable guidewire was introduced, a Headunter catheter of 5 F allowed us to reach the hepatic artery, when necessary, embolising with Gianturco coils, the gastroduodenal artery or anomalous right or left hepatic arteries emergent of the aorta, the superior mesenteric artery or the left gastric artery, to avoid systemic diffusion of the drugs. After positioning the Headunter catheter and having threaded a suitable guidewire, we introduced a catheter of 5,8–6 F perfecting with the aid of a contrast agent the position of the catheter, noting the diffusion of the agent to all sections of the liver. Finally, a subcutaneous pocket was created under the clavicle with an incision of the skin as an inverted T to contain a Port or an Infusaid system. The catheter was filled with a solution containing 2000 U/l of Heparin. The patient was discharged the same day with a prescription for Enoxaparina 2000 U/l or Fragmin 2500 U/l every day.

Patients were examined routinely for both the response of the tumour and the functioning of the catheters, with a determination every 15 days of Dd, CRP, T.Bil, Gamma GT, ALP, AST, ALT, Na, K, Ca, Mg, leucocytes cont, Ht, PTL and a scintigraphy with marked albumin to verify the distribution of the drug in the liver. The patient was asked not to lift the left arm for a week.

Currently, we have implanted 12 catheters using this method in patients with hepatic metastases from a colorectal tumour. All function perfectly. The age range of the patient is 48–76 years. The Karnofsky Performance Status was above 60% for all. There have been no complications due to the method. The operations were conducted in day surgery and no conversion to an ordinary recovery has been necessary. In case of occlusion, dislocation or infection of the catheter, it could be replaced thus permitting the constant efficiency of the HAI. We removed the gallbladder in every patient who underwent rectocollectomy for colorectal cancer, to avoid chemical cholecystitis during chemotherapy. Given the low toxicity of the method and the possibility of substitution, we believe such a route of access should be followed in cases of synchronous metastases of colorectal cancer or in other tumours such as primitive tumours of the liver as suggested by the Japanese group [15].

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