

Embolization of Liver Hemangiomas

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Dear Editor,

It was with great interest that we read the article entitled "Management of liver hemangioma using transcatheter arterial embolization" by Firouznia et al. (1). By way of this article, we can comment on liver hemangiomas and their embolization.

Does the embolization of liver hemangiomas have a therapeutic or a palliative role?

In infants, the embolization of liver hemangiomas with congestive heart failure demonstrates therapeutic efficiency by the rapid resolution of heart failure. This is because of the collaterals between the hepatic artery and the hepatic veins. In adults, heart failure due to a giant hemangioma is very rare and the most common indication in adults is a kind of pain in the trunk. The expectation from the embolization of a liver hemangioma is the cessation of symptoms as a result of the shrinkage of the hemangioma. Although some authors (2-4) have reported satisfactory results with a significant decrease in the size of hemangiomas after embolization, others have found little or no effect on the symptoms (5, 6). After embolization, some amount of shrinkage almost always occurs in the hemangioma but this decrease in size may be far from the expectations of clinicians and patients. There are several reasons for this disappointment. First, although most patients wait for pain relief, the pain increases in the post-embolization period and some symptoms of the hemangioma may continue in the long term. Secondly, the amount of the decrease in the size of the hemangioma can be lower than expected. Whereas three-dimensional computed tomography calculations report a satisfactory decrease in the volume of hemangiomas after embolization (7), two-dimensional measurements usually fail to show any significant decrease in size (5). Thirdly, the shrinkage of a hemangioma after embolization is transient and it reaches its previous volume after a short period of time. It

is, therefore, difficult to claim a clear therapeutic effect for the embolization of liver hemangiomas.

Does the embolization of liver hemangiomas have any efficiency before surgery to decrease blood loss and to facilitate surgery?

The embolization of a liver hemangioma before surgery results in its shrinkage and may confer an easier and quicker dissection of the hemangioma from the retroperitoneal space and its neighboring attachments (8). A remarkable volume reduction of the tumor may allow for a safe approach to the major vascularities of the liver (7). Much as the embolization of a liver hemangioma before surgery helps surgeons, the main determinant of blood loss still depends on the morphology of the hemangioma (i.e. size and location), surgical expertise, and technique.

How long should the time interval between embolization and surgery be?

It is well known that the embolizing effect is transient and that it is beneficial to surgery only if it is performed just before the operation. The studies that have justified preoperative embolization recommend it one day before the operation (9, 10). If the patient has a history of embolization in the past, a new embolization session is necessary before surgery.

What are the adverse effects of embolization?

The most common complications of embolization are related to the thrombosis and necrosis of the liver hemangioma. They include pain in the hemangioma region, fever, nausea, and decreased appetite, which usually lasts less than 1 week (2, 3, 5). Laboratory results demonstrate a frequent leukocytosis and some deterioration of the liver

function tests. The values of the liver function tests usually rise for 3 days after the procedure and return to normal within 2 weeks (2). Serious complications are fortunately rare but possible. Liver abscess, liver failure, sepsis, and migration of the embolizing agent to an unrelated organ such as lungs, gallbladder, and kidneys as well as death due to embolization are all reported complications (2, 3, 5).

Does the surgical technique matter after embolization?

There is debate on the technique of surgery on liver hemangiomas in terms of liver parenchymal resection and enucleation through the hemangioma capsule. There is no randomized study yet to compare both techniques. It seems to us that preoperative hepatic arterial embolization and enucleation is a reasonable combination instead of embolization plus the formal liver resection. Selective embolization does not decrease the arterial supply of the line of the formal resection and it may even relatively increase the arterial supply of the remaining liver. This hypothesis may explain the more blood loss in the cases of preoperative selective hepatic arterial embolization combined with the formal hepatic resection (7).

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