



Quality of life after laparoscopic resection of hepatic hemangioma

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Advances in minimally invasive hepatobiliary surgery during the last decade have supposed an improvement in postoperative outcomes. Thus, most centers indicate laparoscopic approach in patients with benign tumors, especially in the hepatic hemangioma (1). In the evolution of the surgery for a more personalized and integrated care, the term quality of life (QOL) it is becoming more important. The QOL evaluate certain items that allow us to know the status of the patient after the surgery and the recovery process with respect to their initial health status. In their recent propensity score matching analysis entitled “Surgical outcomes and quality of life between laparoscopic and open approach for hepatic hemangioma”, Liu *et al.* suggested that the patients with a hepatic hemangioma benefit from laparoscopic surgery regarding short-term outcomes but that there is no greater QOL in the postoperative period compared to those that were operated openly (2). As in this article, several authors have analyzed the impact of liver resection on the QOL after surgery (3,4). Classically, the etiology of liver disease, the type of treatment and the symptoms have been the most studied, but they can't fully explain the improvement of the QOL since psychological variables also play an important role. Even so, specific factors of liver surgery such as the use of a minimally invasive approach, the performance of a major resection, the benignity or malignancy of the lesion, a primary or metastatic disease, or the correct information to the patient about the estimated time of recovery are essential in the postoperative patient QOL.

Solid benign tumors were one of the first indications

for laparoscopic resection. The consensus conference held in Morioka (5) recommended that the surgical indications for benign liver tumors should not be extended by the fact that they will be performed by laparoscopy. Nowadays, the indications for surgery for liver hemangiomas are very restricted, including the presence of abdominal symptoms, rupture, fast growth, Kasabach-Merritt syndrome and uncertain diagnosis. So, it is remarkable that the authors present a series with a large sample size in a short time, of which more than half were operated by open surgery. Hemangioma size is one of the most frequent surgical indications, especially in those considered as huge hemangiomas. Most authors consider as huge hemangiomas when the size is greater than 10 cm. However, Liu *et al.*, consider as huge hemangiomas when the size was greater than 5 cm, which could explain the high number of patients operated on in just 2 years.

In these types of tumors, several studies have focused on the impact of the laparoscopic approach on the QOL. Giuliani *et al.* described better results at 6 months after surgery in the laparoscopic group. However, at 12 months after surgery, there were no differences between the groups (6). In the same context, Kneuert *et al.* reported that those patients operated by laparoscopic approach presented better outcomes in relation to the QOL in the short (6 months) and long term (12 months) outcomes (7). Symptomatic patients present the greatest benefit. Similarly, this improvement after surgery has also been described in relation to laparoscopic surgery of simple hepatic cysts compared to open surgery as well as conservative

management (8).

Recently, van Rosmalen *et al.* published a review with patients operated from hepatocellular adenoma, focal nodular hyperplasia and hemangioma (87% by open approach and 13% by laparoscopy). The most frequent indication was the presence of symptoms (56%) reaching a resolution of them in 82% of patients. Only 2 of the 8 QOL tools used found significantly better QOL scores after laparoscopy compared to open surgery. Although the interpretation of these results should be cautious because the authors did not specify whether the presence of symptoms was related before or after surgery with the type of approach or benign tumor (9). Hence the importance of studies such as the one reported by Liu *et al.* where a propensity score matching was performed providing us more accurate information on this topic.

The perception of QOL is influenced by the experience prior to a previous surgical intervention, being different when the indication is liver metastases or a primary liver tumor. Bruns *et al.* concluded that patients with liver metastases presented a better perception of physical and mental QOL compared to those who had undergone resection for primary liver lesions (10). This may be because as they have previously undergone to the postoperative experience of surgery, they are aware that the recovery of QOL may take a few months. Another important agent related to the QOL is the time that patients will need to recover it completely. It is essential to explain to the patients that the QOL presents a progressive improvement that may even need up to 1 year to return to normal health status.

The nature of benignity or malignancy of the liver tumor can also affect the QOL. The attitude and expectations of the patient according to the planned surgical intervention in case of a malignant diagnosis is different of benign tumors due to patients with malignant disease know that surgery is may be the only potentially long-term treatment strategy. Different authors also suggested that a poor clinical prognosis was not correlated with a poor QOL (11) in patients undergoing liver resection for malignant disease compared to those with benign disease (12). On the other hand, patients with malignant diseases obtained worse results regarding scores in relation to physical and social function. Despite the good results previously described in relation to the QOL in patients with malignant tumors, Vanounou *et al.* reported a worse QOL, probably related to the influence of adjuvant treatments (13). These studies reveal the controversy regarding the improvement of QOL after laparoscopy in relation to the etiology of the tumor.

Hepatic hemangiomas usually require minor resections with low postoperative risk. However, in huge tumors (larger than 10 cm), the extension of the liver resection could be related to an increase risk of serious surgical complications such as liver failure. This is one of the reasons for not change the indications of surgery in this kind of tumor. Even so, Martin *et al.* used several measures of QOL, and concluded that major hepatectomies had a return to baseline QOL at 3 months with a progressive increase at 6 months in the scale of physical, functional and global health (14). Although it was also true that minor hepatectomies recovered more quickly, with an approximate time of around 6 weeks.

In summary, the advantages associated with the laparoscopic approach in the resection of hepatic hemangiomas could be related to an improvement in the QOL. The analysis of the impact on the QOL of laparoscopic liver resection in these tumors it is complicated because of the heterogeneity of the groups and indications. There is a trend in the literature to an earlier recovery of QOL related to health in those patients operated by laparoscopic surgery but after a few months it is similar to the open approach.

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