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Therapeutic Indications in Hepatic Hemangiomas: About 15 Cases

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Abstract **Original Research Article**

Hepatic hemangioma is a benign tumor that remains latent in most cases and only exceptionally leads to complications. Therefore, therapeutic abstention should be the rule in most cases. Surgical intervention, as a first-line treatment, should be reserved for only symptomatic and complicated forms. Hemangiomas can be safely removed by hepatic resection or enucleation. Enucleation should be the technique of choice when the tumor location and technical factors are favorable. This is a retrospective study including all patients with radiologically or, if necessary, histologically confirmed hepatic hemangiomas, followed up at the Moulay Ismail Military Hospital over a 15-year period. 15 patients were included. The aim of our study is to evaluate the outcomes of different treatments for hepatic hemangiomas, while specifying the epidemiological and anatomoclinical aspects of these tumors, and to deduce the most reasonable therapeutic approach.

Keywords: Hepatic hemangioma, ultrasound, enucleation, hepatic resection.

INTRODUCTION

Hepatic hemangioma is a benign tumor composed of multiple blood-filled cavities lined by a single layer of endothelial cells. It is the most common benign liver tumor; its prevalence in the general population can reach up to 20%. It primarily affects women and remains asymptomatic in most cases. Advances in medical imaging allow for a diagnosis in over 90% of cases. However, if diagnostic doubt persists, a histological proof is necessary. The aim of our study is to evaluate the outcomes of different treatments for hepatic hemangiomas, while specifying the epidemiological and anatomoclinical aspects of these tumors, and to deduce the most reasonable therapeutic approach.

MATERIALS AND METHODS

This is a retrospective study including all patients with a radiologically or histologically confirmed hepatic hemangioma who were followed up at the Moulay Ismail Military Hospital over a 15-year period. A total of 15 patients were included.

RESULTS

We observed a clear female predominance in our series: 10 women to 5 men. The sex ratio is 2. The average age of our patients is 42 years, with a range from 18 to 71 years. The role of oral contraceptives appears evident: 50% of women had used oral contraception. The most common mode of discovery was incidental, in 8 out of 15 cases, the hemangioma was found during an ultrasound performed for another reason. In other cases, the hemangioma was discovered due to hepatomegaly and/or right upper quadrant pain. Only one case was discovered following a complication: hemoperitoneum caused by spontaneous rupture of the hemangioma.

An ultrasound was performed on all patients. It allowed for a definitive diagnosis in 5 patients. The diagnosis was confirmed in 4 patients by computed tomography scan and in 3 cases by magnetic resonance imaging. For the remaining 3 cases, an exploratory laparotomy was necessary to establish the diagnosis.

Due to the latent, minimally symptomatic nature and small size of the lesion, a conservative approach was adopted for 8 patients. Long-term follow-up revealed no changes clinically, biologically, or radiologically. Seven patients required surgical intervention due to symptoms, giant or diffuse nature of the hemangioma, diagnostic purposes, or complications. Surgical procedures included a segment IV resection and a bi-segmentectomy of segments VI and VII. Clamping techniques were used to minimize blood loss during surgery. Three clamping procedures were performed: two continuous for 20 minutes each and one intermittent of 20-5 minutes. Postoperative recovery was uncomplicated, with an average hospital stay of 7 days.

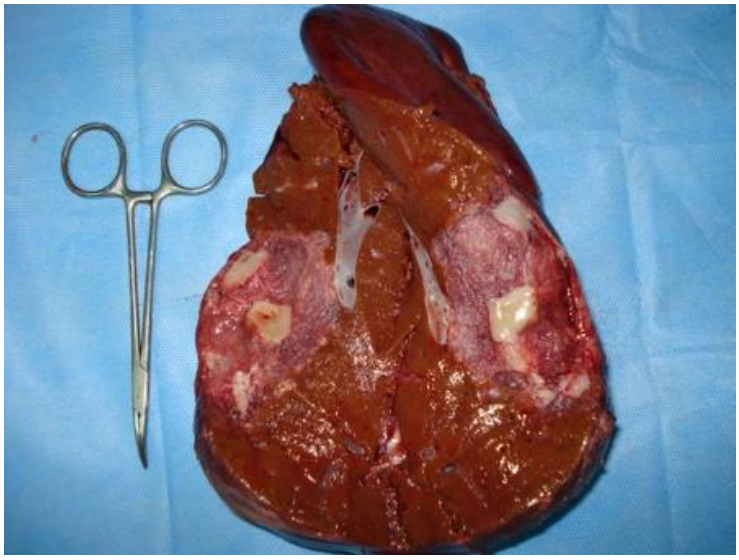

Figure 1: Surgical specimen of a left hepatectomy showing the macroscopic appearance.

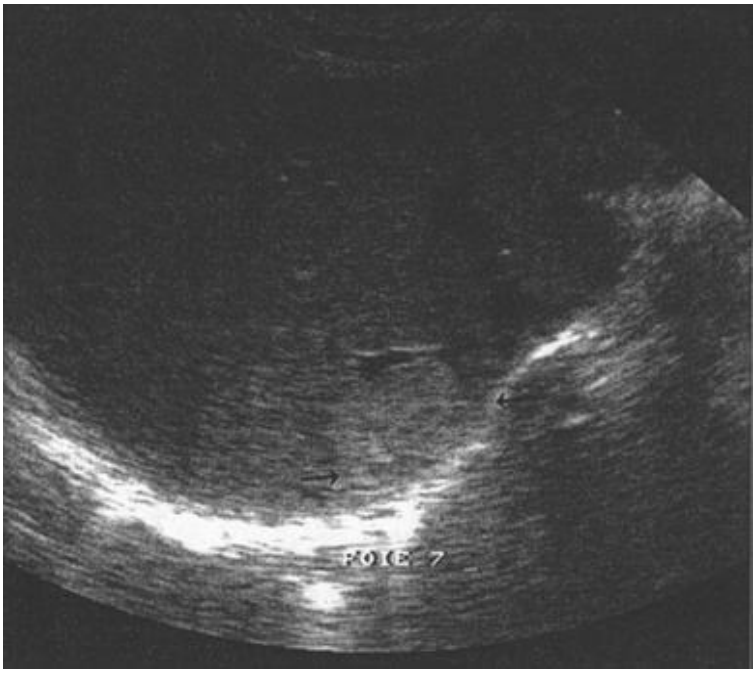

Figure 2: Hepatic ultrasound: hyperechoic, homogeneous, well-defined, subcapsular image = Hepatic hemangioma

Figure 3: Hepatic hemangioma: CT scan shows hypodensity without contrast injection. Progressive centripetal peripheral filling

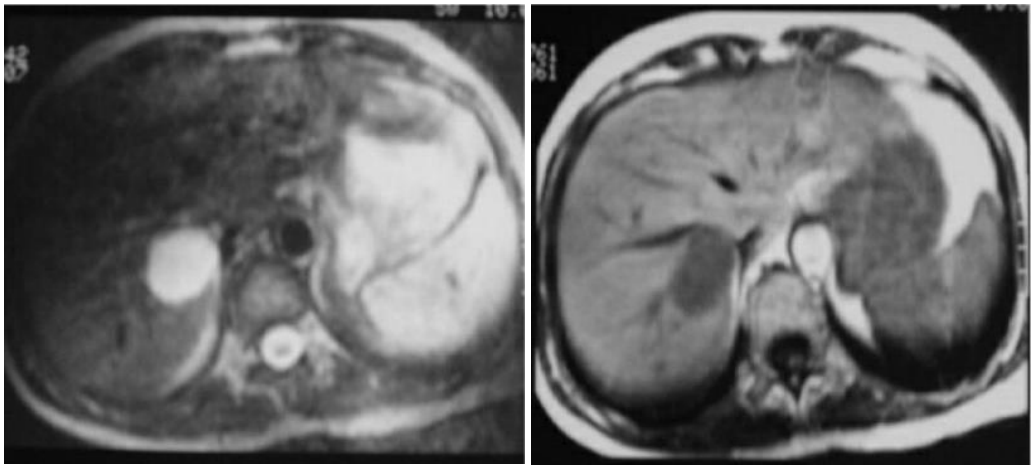

Figure 4: Homogeneous hyperintensity on T2-weighted images: diagnostic of certainty

DISCUSSION

Hepatic hemangioma is the most common benign tumor of the liver. Its prevalence is estimated to be between 2% and 5% of the general population [1].

It can be seen at any age. The preferred age is between 30 and 50 years [2]. The average age of our patients is 42, which falls within the range reported in the literature, with extremes ranging from 18 to 71 years. All clinical series emphasize the marked female predominance of the condition [3]. In our series, we observed 10 women for 5 men, giving a sex ratio of 2. Macroscopically, the tumor presents as lobulated masses, dark red in color, sometimes alternating with areas of white sclerosis [4, 5] (Figure 1).

Small hemangiomas, less than 4 cm in size, are the most common. Large hemangiomas, ranging from 4 to 10 cm, are found in 41% of cases. We observed 4 such cases, representing 34%. Giant hemangiomas, measuring more than 10 cm, are rarer.

Clinically, hepatic hemangiomas are most often asymptomatic, discovered incidentally during a radiological examination or in case of a complication of the hemangioma. Symptomatic forms of this condition are dominated by right upper quadrant pain and/or hepatomegaly or, more rarely, by hemoperitoneum. In our series, 7 patients were symptomatic. Imaging plays an important role in the diagnostic approach to hepatic hemangiomas. The increasingly frequent use of ultrasound allows for the discovery, often incidental, of a large number of hemangiomas [6-9].

In larger lesions, the echo-structure is heterogeneous with hypoechoic central zones (fibrosis or necrosis) that may contain calcifications [10, 11] (Figure 2). Computed tomography has increased its diagnostic performance by allowing for increasingly fine studies of the liver structure. In typical forms, it shows a hypodense appearance without injection and a peripheral, discontinuous, nodular enhancement with centripetal filling of the lesion. This filling kinetics is pathognomonic of hemangioma [12] (Figure 3).

Magnetic resonance imaging (MRI) is becoming increasingly important for the evaluation of liver parenchymal lesions [13-15]. Indeed, MRI can provide definitive diagnosis of hemangioma, showing a hypointensity on T1-weighted images and a homogeneous hyperintensity on T2-weighted images, which is independent of the size or vascular abnormalities of the tumor (Figure 4).

Complications are exceptional. They occur in large hemangiomas. Spontaneous rupture, which can be dramatic, is exceptional: less than 30 cases are reported in the literature [16]. Trauma or pregnancy could increase the risk [17].

A watch-and-wait approach has always been the standard for hepatic hemangiomas, due to the latent or minimally symptomatic nature of the lesion and the absence of progression. The risk of cancerization is zero [18].

In our series, a watchful waiting approach was adopted in 8 out of 15 cases (53%) due to the latent nature and small size of the lesions. Quarterly clinical, biological, and radiological follow-ups revealed no changes in all cases. Surgical treatment for hepatic hemangiomas is rarely indicated, and the indications must consider the risks of liver surgery. Simple enucleation of the hemangioma, possibly combined with clamping of the hepatic pedicle, is considered the technique of choice by several authors. When the hemangioma is well-confined to one or two segments, and when enucleation is not technically feasible, the treatment of choice is a segmentectomy [19, 20]. We performed a segment IV segmentectomy and a segment VI and VII bisegmentectomy. Preoperative embolization would improve coagulation and make surgery more efficient and safer. We did not perform this procedure on any of our patients. The use of clamping and vascular control techniques reduces intraoperative blood loss,

which improves postoperative outcomes. We performed 3 clamping procedures: 2 continuous and 1 intermittent.

CONCLUSION

Hepatic hemangioma is a benign tumor that remains latent in most cases and only exceptionally leads to complications. Therefore, a watchful waiting approach should be the standard of care in the majority of cases. Surgical intervention, as a first-line treatment, should be reserved for symptomatic and complicated cases only. Hemangiomas can be safely removed by hepatic resection or enucleation. Enucleation should be the technique of choice when the location of the tumor and technical factors are favorable.

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