

# Imaging findings of unusual hepatic tumors: expanding the differential diagnosis

*Achados de imagem dos tumores hepáticos incomuns: ampliando o diagnóstico diferencial*

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In the last two decades, the sizeable increase in the number of imaging examinations performed for various clinical indications has led to a profound change in the way several lesions in different organs and clinical situations are diagnosed. Those changes cover a range of impacts on the management of such lesions and on the approach to such cases which can or may not be clinically significant. That is to say, a great increase in incidentally found lesions, including clinically insignificant and subclinical lesions, has allowed radiologists to increase even more their already intense contribution to the understanding of the natural history of several of such lesions by means of providing an early diagnosis as well as by delivering imaging follow-up of some lesions. In this context, we have also witnessed an intense development of histopathological analysis methods, including modern techniques of molecular biology.

Specifically in the case of focal hepatic lesions, there was a significant diagnostic improvement, with increased accuracy of imaging methods in the evaluation of the most frequent lesions such as hemangioma, focal nodular hyperplasia, adenoma, and especially hepatocellular carcinoma. The accumulated solid evidence-based knowledge has radically and positively changed the management of patients with the definition of their typical presentations. For example, currently, histopathological confirmation of hepatocellular carcinoma is rarely required for indicating the treatment or even for the utilization of extra scoring in the determination of the patient's position in the list of liver transplant candidates for those who meet the criteria established by the responsible governmental entity.

Furthermore, following the rationale of the increasing number of imaging studies that persists as a worldwide phenomenon, there is also an increase in the frequency of diagnosis of rarer lesions whose imaging findings demonstrate relatively less accumulated evidences and, therefore, pose greater difficulty and challenge in the establishment of a definite diagnosis exclusively by means of imaging findings. In such a context, the article "Uncommon hepatic tumors: iconographic essay – Part 1" published by Pedrassa et al.<sup>(1)</sup> in the present issue of **Radiologia Brasileira** presents a providential review of imaging findings of a range of those rarer focal liver lesions, including angiosarcoma, angioliopoma,

cystadenoma/biliary carcinoma, epithelioid hemangioendothelioma, and fibrolamellar hepatocellular carcinoma.

In general "uncommon presentations of common lesions are more frequent than 'common' presentations of uncommon lesions". As the five types of lesions described in the mentioned article are considered, one can observe that some imaging findings play a very relevant role in the formulation of diagnostic hypotheses. However, clinical, laboratory and actuarial aspects are equally relevant, particularly in cases where one considers a possible exclusion of the most frequent lesions from the list of differential diagnoses.

Many times, determined imaging findings are sufficient to suggest the presence of certain lesions, like in the case of the finding of macroscopic fat in an angioliopoma and a non-contrast-enhanced central scar (and eventually with calcifications) in the fibrolamellar variant of hepatocellular carcinoma. But a most probable diagnosis should never be based on a single imaging finding, particularly in cases involving focal liver lesions which can mimic each other<sup>(2,3)</sup>. The detailing of such characterization, the association with other characteristics of the lesion itself and of the liver, as well as the clinical and laboratory context, is extremely relevant in the diagnostic consideration.

An interesting aspect of such lesions to be considered is the growth rate determined by their biological behavior that is relatively more known in cases of common lesions. One expects a fast growth of an angiosarcoma and a relatively slow or no growth of an angioliopoma, with the other lesions presenting intermediate growth velocity. Such information is relevant as one considers the increasing probability of identifying incidental subclinical lesions that might eventually fail to present the classical characteristics demonstrated in larger lesions whose clinical presentation is already established. In such a scenario, it is also interesting to reinforce the words in the mentioned article that fibrolamellar carcinoma frequently presents as a large mass because of its slow and silent growth<sup>(4)</sup>.

The necessity of histopathological confirmation persists in a high number of cases of uncommon/atypical liver lesions. Notwithstanding the obvious differences between fine needle aspiration (cytology), core biopsy and excisional biopsy, it is important to have in mind that uncommon lesions may also pose difficulties to a definite pathological diagnosis. A high number of atypical lesions that are clearly subjected to sampling-related problems end up being submitted to core needle biopsy. In a study evaluating core needle biopsy, Mitchell et al.<sup>(4)</sup> propose a general classification of

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lesions as follows: 1) clearly hepatocytic and malignant; 2) clearly hepatocytic and of uncertain clinical nature and malignant potential; 3) clearly malignant and of uncertain lineage; and 4) neither clearly hepatocellular nor malignant, calling attention for the necessity of integration between clinical, laboratory and imaging findings. Also, such authors highlight that the histopathological evaluation requires histochemical and immunohistochemical staining, whose markers selection depends upon hematoxylin-eosin staining findings as well as on the diagnostic hypotheses. Therefore, the expansion of differential diagnoses determined by the utilization of imaging methods is useful and has a positive impact on the histopathological evaluation results.

It is important to have in mind that the introduction of new markers and the constant researches aiming at a better understanding of liver tumors will add information necessary for the identification and description of imaging findings of both common and uncommon lesions, as recently observed in relation to hepatic adenomas<sup>(5,6)</sup>.

Finally, the recognition of imaging findings of uncommon liver lesions as well as of atypical findings of more frequent liver lesions play a relevant role in the construction of an appropriate differential diagnoses list, giving radiologists a prominent role in the diagnosis and treatment of patients with focal liver lesions.

#### REFERENCES

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