

## Case Report

# A New Case of Spontaneous Regression of Inflammatory Hepatic Pseudotumor

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**Introduction.** Inflammatory pseudo-tumors (IPT) of the liver are rare and difficult to diagnose, because mimicking malignant tumors. **Aim.** We report a case of IPT of the liver with diagnosis was made on clinical, radiological and evolutive features. **Observation.** A 15-year-old man had a 4-month history of abdominal pain in the right upper quadrant with fever and cough. Two successive ultrasonographies revealed a hypoechoic lesion occupying the segment VIII with 8 cm of diameter. Physical examination was normal. Laboratory investigation showed normal blood counts, liver function test and tumoral markers. Another ultrasonography was interpreted as normal. Tomodensitometry had shown a 3-cm lesion with enhanced later after contrast injection. A second tomodensitometry done one month later described a 2-cm sub capsular hepatic lesion. **Discussion.** On routine activity, pre operative diagnosis of IPT of the liver is difficult, and rarely made with certitude because mimicking a malignant tumor. In our case report here, the analysis of previous history, of clinical, biological and radiological presentation, had permitted us to pose the diagnosis of IPT of the liver and this despite the absence of histological confirmation by percutaneous biopsy.

## 1. Introduction

The inflammatory pseudotumors of the liver (IPLs) are fibroblastic proliferations more or less fibrous, infiltrated by polymorphic inflammatory cells [1]. They are not so rare since the literature showed many edifying examples [2]. Their better characterization with the morphological examinations had permitted us these last years to make the diagnosis more often. This stresses, especially in face of the great progress realized in the field of surgery of malignant hepatic tumors, the great importance to pay attention to IPLs which the evolution is benign and does not necessitate any intervention. Thus, it is crucial to put on the right diagnosis and prevent unnecessary hepatic resection.

Hereby we present another case of spontaneous regression of IPL in which we recall diagnostic and evolutionary modalities.

## 2. Case Report

We report a case of 15-year-old young man otherwise healthy who complains for 4 months of right upper quadrant pain accompanied with high fever and productive cough. Chest X-ray revealed an elevation of the right diaphragmatic dome (Figure 1). Abdominal ultrasonography showed a hypoechoic and heterogeneous mass, measuring 8 cm in diameter, localized in the hepatic dome (Figure 2). At his admission, the physical examination was normal. White blood cell count was 7500; c-reactive protein was normal too. Hepatic function test and tumor markers were within normal range (AFP and CEA).

Abdominal tomography revealed a subcapsular lesion occupying segments VII and VIII and measuring 4 cm in diameter spontaneously hypodense and having slight peripheral enhancement at delayed stage (Figure 3).



FIGURE 1: Elevation of the right diaphragmatic dome.

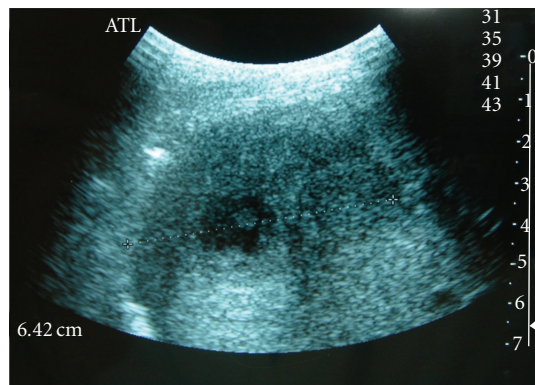
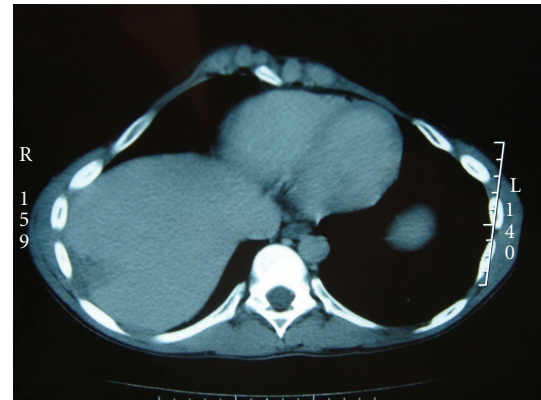


FIGURE 2: Hypoechoic and heterogeneous mass, localized in the hepatic dome.

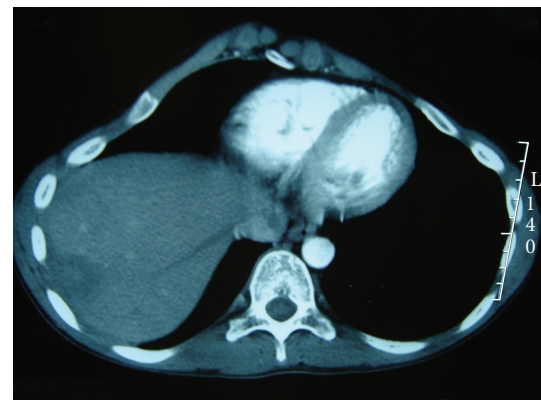
A second tomography done one month later described the same lesion with the same characteristics but with a dramatic decrease in size which is evaluated to be 2 cm in diameter (Figure 4). This spontaneous regression in size associated with radiological characteristics of a partially fibrous lesion permitted us to make the diagnosis of IPL and to abstain from any therapeutics. The patient is doing well and another radiologic control is foreseen in 6 months.

### 3. Discussion

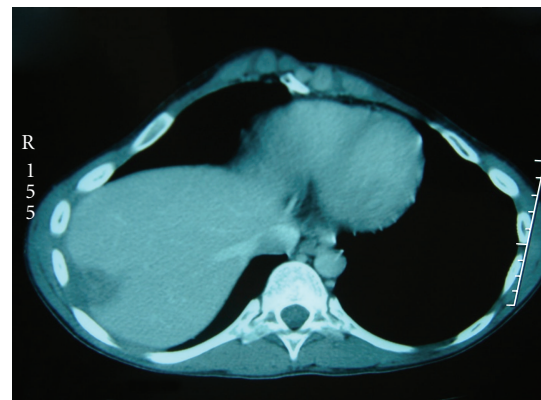
The pathogenesis of IPL remains uncertain. It would be in relation with an exaggerated or inadequate inflammatory response of an existing microorganism in the portal circulation [3]. Abbey-Toby et al. [4] distinguished two clinicopathological entities which have different clinical and radiological forms: the first one consists of both fusiform cells and inflammatory polymorphic cells associated with adjacent fibrous portal endophlebitis and accompanied besides that by an inflammatory syndrome. In return, the



(a)



(b)



(c)

FIGURE 3: CT scan showing subcapsular lesion occupying segment VII and VIII and measuring 4 cm in diameter spontaneously low attenuated and having slight peripheral enhancement at delayed stage.

second form which is encapsulated has abundant central necrosis and it is always clinically asymptomatic. It would be the result of a chronic inflammatory processes and this corresponds to the healing version of IPL. This evolutionary form explains the diminution in size lesion observed in our patient. This evoked several reported cases in literature where regression of IPL either spontaneously or by an anti-inflammatory or antibiotics [2, 5–11] is reported.

TABLE 1: Imaging features of common hepatic lesions.

	US	CT scan	MRI
Hemangioma	(i) hyperechoic (ii) well-defined or lobulated borders	(i) low attenuation on the noncontrast CT (ii) peripheral nodular enhancement	hyperintense on T2
Focal nodular hyperplasia (FNH)	(i) isoechoic (ii) well-defined borders	early enhancement with characteristic central scar	hypointense with central scar which is hyperintense on T2
Hepatic adenoma	discretely hypoechoic	early enhancement	hyperintense on T1 and T2
Hepatocellular carcinoma	(i) hypoechoic, heterogeneous (ii) portal thrombosis	(i) early and heterogeneous enhancement (ii) hypodense, with only the capsule enhancing, on delayed-phase (iii) portal vein occlusion from venous invasion with intraluminal tumor present and expansion of the vessel	hypointense on T1 and hyperintense on T2
Metastatic disease	(i) multiple hypoechoic lesions (ii) lesions with a hypoechoic rim or halo pattern	thick and irregular rim with enhancement	(i) mildly hyperintense to liver (ii) irregular or rim enhancement
IPT of the liver	(i) usually unique (ii) hypoechoic (iii) well-defined borders	(i) low attenuation on the noncontrast CT (ii) late and peripheral enhancement (iii) venous occlusion from gross thickening of the wall of the vein	(i) hypointense on T1, hyperintense on T2 (ii) heterogenic enhancement

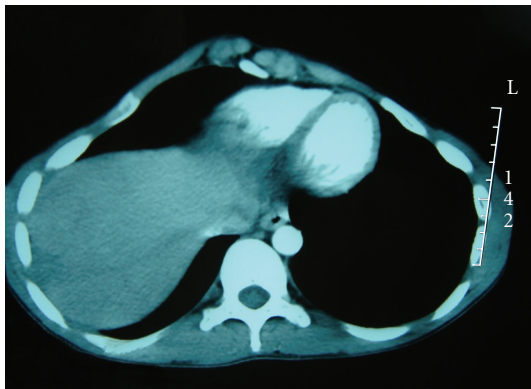


FIGURE 4: CT scan showing a decrease in tumor size which is evaluated to be 2 cm.

Since the IPL are known as benign lesions [2] and that its natural history progresses towards regression, it is essential to make the exact diagnosis and to not consider it as a malignant tumor that may lead to unnecessary resection. However, diagnosis is not easy due to the absence of specific radiological signs and to the variability of the radiologic aspects which are related to the evolutionary stage of IPL [4]. In the current case, the main characteristic that helped to make the diagnosis is the regression of the tumor size on two successive CT scan. The diagnosis should be discussed also when a liver mass has the characteristics of a lesion with a fibrous component with late contrast or necrotic. Indeed, the IPL is hypoechoic on US and has well-defined borders. On

noncontrast CT study, the lesion reveals low attenuation and a moderate enhancement following contrast administration in the periphery and in late stage. On MRI, IPL is frequently hypointense in T1-weighted images, hyperintense in T2-weighted images, and of heterogenic uptake after gadolinium injection [12]. However, these features are variable and the diagnosis is often evoked in the absence of signs for common benign and malignant liver lesions (Table 1).

In terms of radiologic analysis, the diagnosis of IPL should be evoked every time that we are faced with partially fibrous hepatic mass with late uptake of contrast material and in absence of signs for specific hepatic tumor [12]. In this stage the diagnosis may be put on by the presence of regression in size of the hepatic mass as it was the case for our patient and two other cases reported by Yamaguchi et al. [5]. In total, the combination of radiologic suggestive signs on CT scan with a regression of tumor size on successive morphological examinations eliminates all differential diagnoses and can retain the diagnosis of IPT. Otherwise, in the absence of one of these criteria, percutaneous needle biopsy of the tumor is indicated [11]. The pathologic diagnosis is based on the presence of densely hyalinized collagenous tissue with an inflammatory infiltrate of predominantly plasma cells. Some portions of the stroma show fibroblasts in interlacing laminated or whorled patterns. Typical changes are seen in large and medium-sized veins with inflammation involving the vessel walls and filling of the lumen with connective tissue containing capillaries and inflammatory cells. Many veins show complete obliteration of the lumen. In contrast, arteries show no major alterations [2].

It has not been established whether steroid administration accelerates resolution of IPL but it may reduce the systemic symptoms of the inflammatory syndrome [2]. Most often the tumor regresses spontaneously and only a radiological monitoring should be introduced until complete healing of the lesion.

#### 4. Conclusion

The IPL are benign lesions which show spontaneous regression. The preoperative diagnosis is difficult since the radiological presentation is taken for a malignant tumor. Attention should always be paid in case of partially fibrous hepatic mass with late contrast uptake and without any specific sign in order to avoid any unnecessary surgery.

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