Hepatocellular Carcinoma with sarcomatous change

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Carcinome hépatocellulaire avec différentiation sarcomatoïde

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RÉSUMÉ

Prérequis : Le carcinome hépatocellulaire (CHC) avec différentiation sarcomatoïde est une néoplasie rare et de mauvais prognostic.
But : Rapporter une nouvelle observation
Observation : Un patient de 72 ans était hospitalisé pour douleurs de l'hypochondre droit.Le diagnostic de cirrhose était suspecté sur les données cliniques et biologiques. A la tomodensitométrie abdominale, la masse n'était pas hypervascularisée au temps artériel mais prenait le contraste au temps portal et tardif. Le taux sérique d'alpha-foetoproteine était à 500 ng/ml. Le comportement vasculaire atypique de la tumeur motivait la réalisation d'une biopsie hépatique qui a confirmé le diagnostic de carcinome hépatocellulaire à différentiation sarcomatoide.
Conclusion : En dehors de la biopsie hépatique, aucun moyen diagnostique ne permet la distinction entre les formes typiques et sarcomatoides du CHC

Mots-clés

Carcinome- Hepatocellulaire- sarcome -foie -biopsie

SUMMARY

Background : Hepatocellular carcinoma (HCC) with sarcomatous change is an uncommon neoplasm with a poor prognosis.
Aim: To report a new case
Case report: A 72-year-old man presented with abdominal right upper quadrant pain. The diagnosis of cirrhosis was suspected on clinical and biochemical data. On abdominal computed tomography, the mass was not enhanced in the arterial phase and exhibited peripheral enhancement during portal phase which persisted in the delayed phase. The serum alpha-fetoprotein was 500 ng/ml but since the imaging features were not typical of ordinary HCC, percutaneous liver biopsy was performed and confirmed the diagnosis of HCC with sarcomatous change
Conclusion: Except for liver biopsy, no diagnostic method could distinguish between sarcomatous and ordinary HCC.

Key-words

Carcinoma- hepatocellular- sarcoma- liver -biopsy

Hepatocellular carcinoma (HCC) with sarcomatous change is an uncommon neoplasm [1-4]. Because of its poor prognosis, the diagnosis of this tumor is clinically important. To date, only a limited number of cases have been described.Here we report a new case.

CASE REPORT

A 72-year-old man was admitted with a 1-month history of abdominal right upper quadrant pain without fatigue, anorexia, weight loss, fever or jaundice. On admission, the physical examination revealed abdominal wall venous collaterals. No hepatomegaly, splenomegaly, abdominal mass, ascites, jaundice, or peripheral lymphadenopathy was noted. Laboratory studies showed the following results: Aspartate aminotransferase:61IU/l(normal range 5–34IU/l); Alanine aminotransferase:26 IU/l(normal range 5–55 IU/l); Alkaline phosphatase 63IU/l (normal range 40–150IU/l);Gamma glutamyl transpeptidase:85 IU/l (normal range12–64IU/l); total bilirubin rate: 11 umol/l(normal range 3,4–20,5 IU/l) ; prothrombin rate level 65%; serum albumin34g/l(normal range38-56 g/l) ;serum cholesterol:3.39 mmol/l(<5.18); creatinine level 104 umol/L(normal range 62–115IU/l);anemia with 11g/dl and a platelets count :294000/mm3. Serum alpha-fetoprotein (AFP):500 ng/ml (normal range <10 ng/ml); Hepatitis B surface antigen was negative but antibodies to hepatitis C virus and viremia were positives. Abdominal ultrasonography (US) disclosed a large mass in the right lobe of the liver. Computed tomography (CT) showed on unenhanced phase, a large hypo attenuating 70x50 mm mass in segment V, VI of the liver. After contrast injection (figure 1), the mass was not enhanced in the arterial phase but exhibited peripheral enhancement during portal phase which persisted in the delayed phase. Vascular invasion of the right portal vein and hilar and mesenteric nodes were also seen.

Figure 1 : Enhanced computed tomography (CT)

Figure 1A : CT arterial phase: the mass was not enhanced

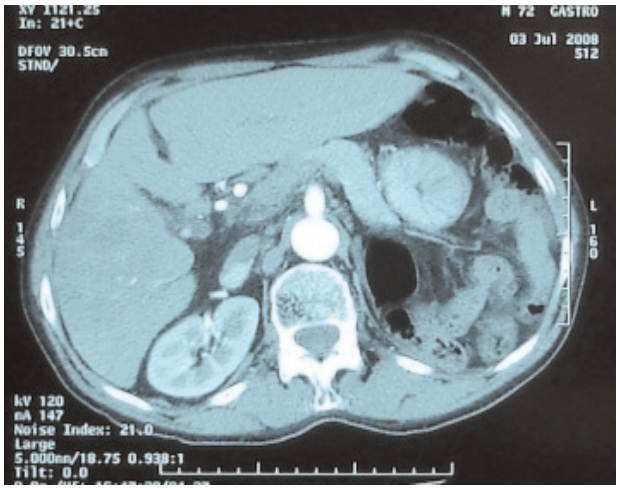


Figure 1 B: CT portal phase: the mass exhibited peripheral enhancement

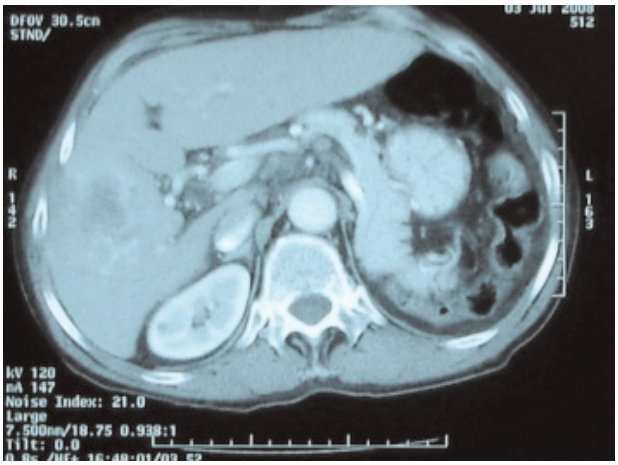
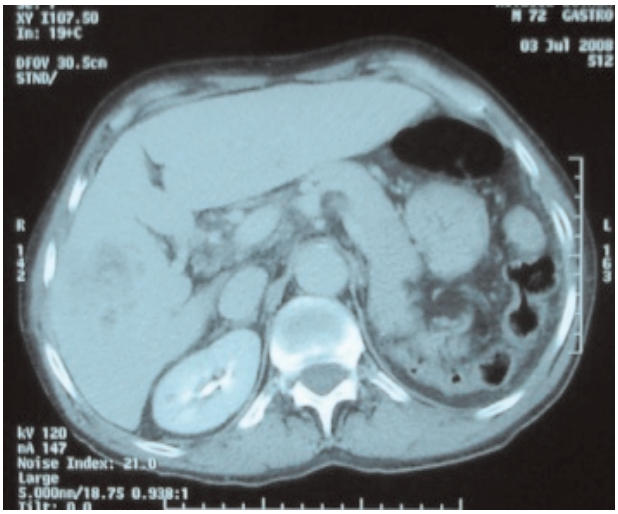


Figure 1 C : CT delayed phase: the enhancement persisted



The upper gastrointestinal endoscopy revealed grade II esophageal varices. The diagnosis of HCC in a cirrhotic liver was probable but since the imaging features was not typical of ordinary HCC, percutaneous liver biopsy was performed. Histologically, the proliferation was composed of large cells often spindle-shaped. These cells presented irregular nuclei sometimes monstrous and often mitotic with prominent nucleoli (Figure 2). A focus of polyhedral eosinophilic epithelial cells disposed in cords was also identified. Immunohistochemical study was performed using the Envision Method (Dako Corp) (Figure 3) and showed that the spindle cells express cytokeratin 20, hepatocyte HepPar 1 and vimentin but not chromogranin, pankeratin and CD138. Finally, the diagnosis of advanced HCC with sarcomatous change was made. The patient leaves hospital and died 3 months later.

Figure 2 : Microscopic findings of the liver biopsy spindle-shaped cells with significant nuclear atypia HE X400

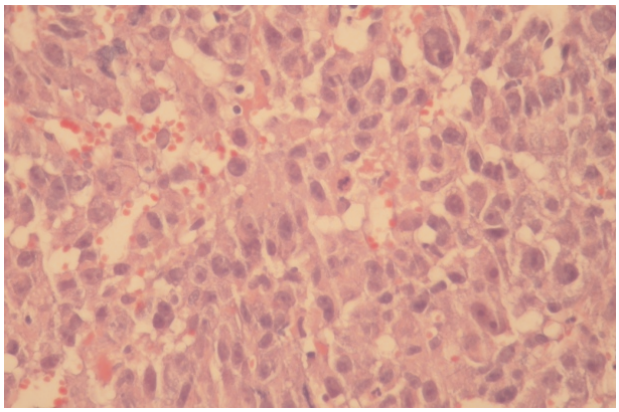


Figure 3 : immunohistochemical features X200

Figure 3 A. : immunoreactivity to cytokeratin20

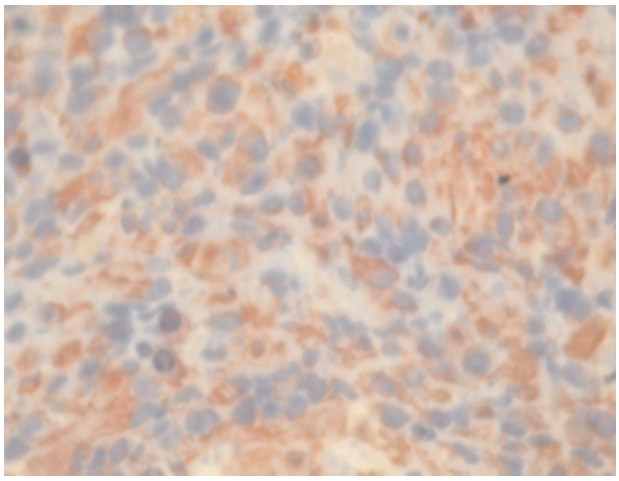


Figure 3 B. : immunoreactivity to hepatocyte

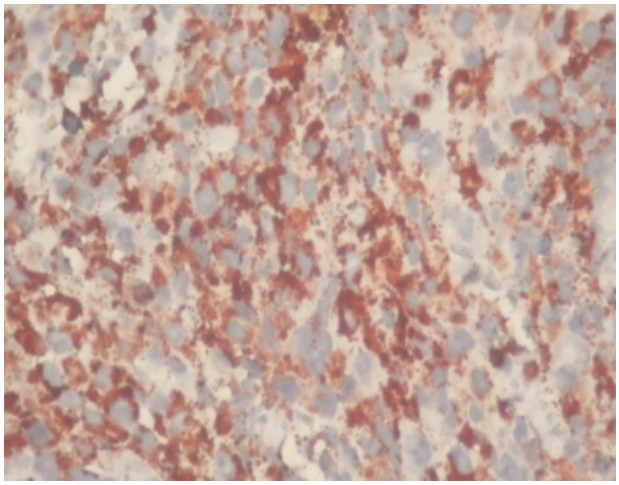
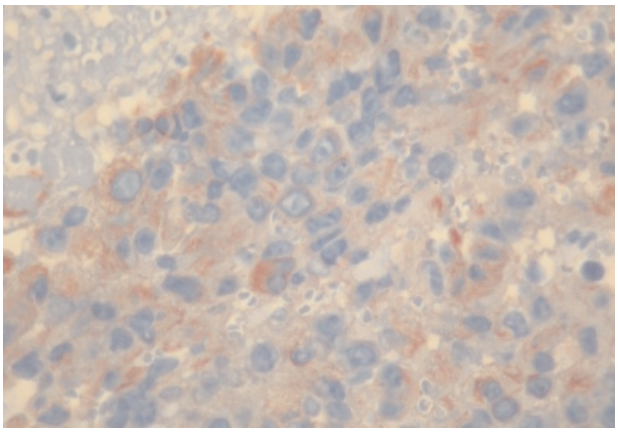


Figure 3. C: immunoreactivity to vimentin



DISCUSSION

We report a new case of hepatocellular carcinoma (HCC) with a sarcomatous change.This neoplasm is uncommon and has been found in 3.9%-9.4% of all HCC in autopsy cases [1-2], and in 1.8% of all resected HCC [3].

The tumor is characterized by a very poor prognosis caused by rapid growth [5], low resectability and frequent recurrence after curative resection [6-8], and even after liver transplantation [7]. Although the pathogenesis of sarcomatous transformation has not been clarified, sarcomatous components are thought to be derived from a dedifferentiation or anaplasia in HCC [2], rather than a combination of HCC and sarcoma [4]. The sarcomatous transformation may be induced by Anti-HCC treatments such as radiofrequency ablation, percutaneous ethanol injection therapy and transarterial chemoembolization, through degeneration, necrosis, and regeneration of tumor cells [1, 9]. This change may also be associated with interferon therapy for viral hepatitis C. Few studies have described cases similar to ours where no prior therapy has been used.

It is not yet possible to detect sarcomatous changes by imaging. Sarcomatous HCC likely forms a larger tumor than ordinary HCC and the interior of the tumor often exhibits hemorrhage and necrosis [9-10] .Some authors have reported that the interior of the tumor of sarcomatous HCC was not enhanced, with only delayed or prolonged peripheral enhancement seen by contrast-enhanced CT examination[9]. In our case, since the tumor was not enhanced during the arterial phase, percutaneous liver biopsy was justificated.

Histologically, most tumors with a sarcomatous appearance include anaplastic spindle-shaped cells forming interlacing bundles with a partial storiform pattern. The spindle-shaped cells have an eosinophilic cytoplasm, ovoid or long nuclei, with marked anisocytosis and frequent mitoses. The sarcomatous component usually occupies more than 10% of the tumor volume. A gradual transition between these sarcomatous features and ordinary HCC can be seen at the tumor-non tumor boundary [3].

Immunohistochemical analyses show that spindle cells frequently express vimentin whereas cytokeratins are generally expressed in the glandular component [2-4, 8]. Albumin, fibrinogen and AFP expression are not significantly different compared to ordinary HCC.

Prognosis assessment is difficult due to the low incidence of HCC with sarcomatous change. In the presented case, the worse outcome was related to detection of disease in advanced clinical stage.

In patients treated conservatively, Kakizoe et al. reported an average survival rate of four months in a group of 14 cases [2].In patients treated by liver resection, Maeda et al observed that survival in the 13 patients with sarcomatous change was significantly lower than in 371 patients with ordinary HCC with an increased rate of extrahepatic metastases (46%) and portal invasion (62%) [3].Cases of patients with HCC with sarcomatous change who have undergone liver transplantation are rare in literature. Hwang et al analyzed the outcomes of 15 patients with sarcomatous HCC after resection (n=11) or liver transplantation (n=4) and showed that in patients within the Milan criteria, 2-year overall survival rate was 25% after resection and 33% after liver transplantation [7].

CONCLUSION

Sarcomatous change has been rarely observed in hepatocellular carcinoma. Except for liver biopsy, no diagnostic method could distinguish between sarcomatous and ordinary HCC. The prognosis of patients with sarcomatous HCC remains very unfavorable even after curative treatment.

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