

Solid Tumour Section

Mini Review

Liver: Undifferentiated carcinoma

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Published in Atlas Database: September 2010

Online updated version : <http://AtlasGeneticsOncology.org/Tumors/UndifCarcLiverID5726.html>

DOI: 10.4267/2042/45044

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Identity

Note

Undifferentiated carcinoma of the liver is extremely rare, and relevant available literature is limited.

Classification

Note

A malignant epithelial tumor that is so poorly differentiated that it cannot be placed in any other category. However, no specific definition has been established.

Clinics and pathology

Disease

Diffuse growth of anaplastic epithelial cells with no glandular or other distinct organoid differentiation. The precise pathogenesis of undifferentiated carcinoma in the liver remains unclear. In experiments, transformed hepatic stem cell (oval cell) lines gave rise to undifferentiated carcinoma, as well as cholangiocellular carcinoma, after subcutaneous transplantation into newborn rats.

Etiology

Etiology is not well known.

Epidemiology

Undifferentiated carcinoma of the liver is very rare, accounting for less than 2% of all epithelial liver tumors. There is a male preponderance, but no data on its geographic distribution are available.

Clinics

Localization, clinical features, symptoms and signs,

and diagnostic procedures are similar to those for hepatocellular carcinoma (HCC). In many cases, imaging studies show hypovascular masses. Undifferentiated carcinoma shows a trend toward rapid proliferation and progression, and the associated prognosis is generally poor. Increased incidences of both dissemination and metastases have been reported. Regarding tumor markers, elevated serum levels of alpha-fetoprotein (AFP), PIVKA-II, and neuron-specific enolase (NSE) have been reported in some patients, but they are not disease specific.

Pathology

Undifferentiated carcinoma of the liver shows some characteristic features. Microscopic findings reveal a neoplasm composed of cells with solid or compact growth pattern in sheets, nests, or medullas. Tumor cells are relatively small and generally rounded or spindle-shaped with scanty cytoplasm. Nuclei are round to short spindle-shaped and moderately chromatic with small inconspicuous nucleoli. Because undifferentiated carcinoma shows a tendency to necrosis, it occasionally liquefies in part and presents with cystic changes in imaging studies. Undifferentiated carcinoma of the liver with osteoclast-like giant cells, neuroendocrine features, or extensive choriocarcinoma components has been reported as a special type. The reported case with neuroendocrine features had high serum levels of NSE, and immunohistochemical staining of the biopsy samples was positive for synaptophysin. In the case with choriocarcinoma component, the multinucleated syncytiotrophoblast-like tumor cells were positive for beta-human chorionic gonadotropin, and trophoblastic differentiation of poorly differentiated tumor cells might account for the pathogenesis of the choriocarcinoma component.

Treatment

Surgical resection of the tumor. Systemic or hepatic arterial injection of cisplatin, cisplatin + etoposide, or cisplatin + 5-FU has been effective in some cases.

Prognosis

Undifferentiated carcinomas are postulated to have a poorer prognosis than HCC, although evidence from more cases is needed to support this hypothesis. Insufficient reliable information regarding undifferentiated carcinoma of the liver is currently available to provide a prognosis.

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This article should be referenced as such:

Enjoji M. Liver: Undifferentiated carcinoma. *Atlas Genet Cytogenet Oncol Haematol*. 2011; 15(6):542-543.
