

Undifferentiated Embryonal Sarcoma of the Liver in an Adult: Case Report

Erişkinde Karaciğerin Diferansiye Olmamış Embriyonel Sarkomu

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ABSTRACT Undifferentiated embryonal sarcomas (UES) of the liver are tumors that are rarely seen in adults. A 37 year old woman presented with a heterogeneous mass covering almost entire left lobe of liver. Tumor markers alpha fetoprotein (AFP), carcinoembryonic antigen (CEA) and CA 19-9 were within normal limits. The lesion consisted of cystic and solid areas. Excision providing safe margins was performed. Histopathological and immunohistochemical findings were compatible with UES. Clinical, radiological and laboratory findings of UES are not specific and a wide range of differential diagnosis is available before and after histopathologic examination. These tumors are tend to be in large sizes, preoperative chemotherapy can give opportunity to complete resection by providing shrinkage in the tumor. We would like to present this case with clinical, laboratory and radiological findings in correlation with the literature, because of the rare incidence of UES in adults.

Key Words: Liver; sarcoma; immunochemistry

ÖZET Karaciğerin diferansiye olmamış embriyonel sarkomu (DOES) erişkinlerde nadir görülür. Otuz yedi yaşında kadın hastada karaciğerin sol lobunu tama yakın kaplayan heterojen kitle mevcuttu. Tümör belirteçleri alfa fetoprotein (AFP), karsinoembriyonik antijen (CEA) ve CA 19-9 normal sınırlarda idi. Lezyon kistik ve solid alanlar içeriyordu. Sağlam sınırlar ile eksize edildi. Histopatolojik ve immünhistokimyasal bulgular ile diferansiye olmamış embriyonel sarkom tanısı konuldu. Bu tümörler büyük boyutlarda olmaya meyilli olduğundan, operasyon öncesi kemoterapi tümörde küçülme sağlayarak komplet rezeksiyona imkan verebilir. DOES'un klinik, radyolojik ve laboratuvar bulguları spesifik değildir ve histopatolojik inceleme öncesi ve sonrasında geniş bir ayırıcı tanı yelpazesi vardır. Erişkinlerde embriyonel sarkom nadir olması nedeni ile klinik, laboratuvar ve radyolojik bulgular ile beraber literatür eşliğinde sunulmaktadır.

Anahtar Kelimeler Karaciğer; sarkoma; immünkimya

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Undifferentiated embryonal sarcoma (UES), a tumor with mesenchymal origin, was first identified in 1978 by Stocker and Ishak. UES occurs in children at the ages of 6 to 10. The adult population is extremely rare.¹

CASE REPORT

A 37-year-old woman with a 6 month history of abdominal pain had severe attacks for 3 weeks. Upper abdomen ultrasound examination showed

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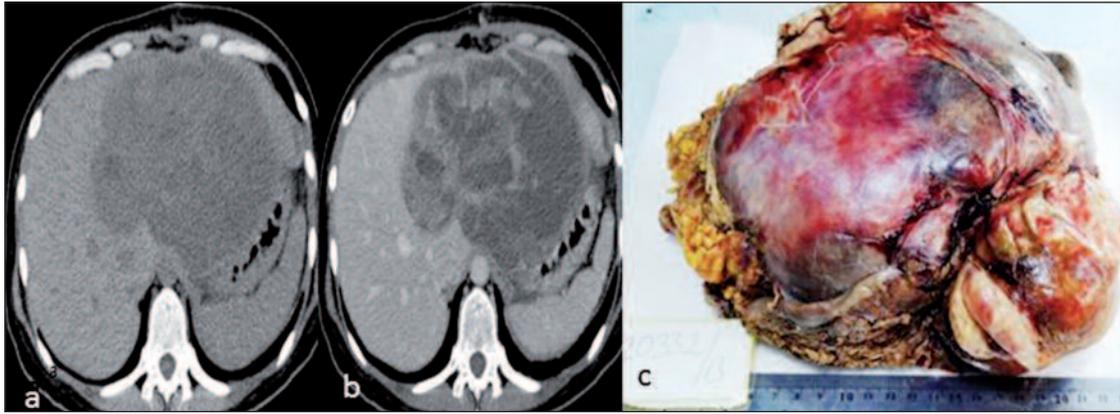


FIGURE 1: Unenhanced (a) axial CT image shows large heterogeneous hypodense solid mass involving entire left lobe of the liver. Contrast-enhanced (b) portal phase axial CT images show gradually increased enhancement in medial part of the mass with large necrotic areas. (c) Tumoral mass covering almost the entire left lobe of the liver.

a heterogeneous mass with solid and cystic areas covering the left lobe of the liver. Abdominal computerized tomography (CT) revealed a 16x12x8 cm mass with heterogeneous density, covering the left lobe of the liver and deviating the stomach to the posterolateral side (Figure 1a, b).

Incisional biopsy was compatible with mesenchymal tumor predominantly consisting of myxoid areas. The patient admitted to our hospital for further investigation. On physical examination a mass was detectable in the middle of the abdomen. No other abnormality was apparent in the systemic examination. Hepatic enzymes aspartate transaminase (AST) and alanine transaminase (ALT) were found in normal interval while alkaline phosphatase (ALP) and gamma-glutamyl transpeptidase (GGT) were mildly increased. Tumor markers alpha fetoprotein (AFP), carcinoembryonic antigen (CEA) and CA 19-9 were within normal limits. Elective abdominal exploration revealed an approximately 19 cm mass covering the left lobe of the liver. The borders between the lesion and stomach were indistinct.

On macroscopic examination, it was well-circumscribed but incompletely capsulated, 19x15x11 cm in size, yellow pink colored and had soft consistency (Figure 1c). Sectional areas were myxoid, necrotic and cystic in some parts. Parenchymal margin was considered robust.

There were individual or fascicular spindle-shaped tumor cells which were widely placed in myxoid matrix and their cellularity was partly increasing. In some places, many of the cells were pleomorphic (Figure 2a, b, c).

Tumoral cells can react positively with vimentin, alpha 1 antitrypsin, glypican 3, CD10, Bcl-2 with immunohistochemistry. Staining was not observed with Heppar, the smooth muscle actin (SMA), desmin, CD34, pancytokeratin, HMB-45, CD 117, and DOG1 antibodies. In the cytoplasm of the cells and in the intercellular place, PAS positive diastase resistance globules were observed such as hole punch sharply demarcated eosinophilic structures (Figure 2d). The histological appearance and the results of immunohistochemistry were compatible with undifferentiated embryonal sarcoma of the liver. Chemotherapy regimen, including Ifosfamide, Adriablastina and Mesna (IMA) was initiated for the patient.

DISCUSSION

UES is a malign mesenchymal tumor seen typically in the childhood period. It is in the fourth place among the malign liver tumors in childhood.² It is pretty seldom in adulthood. While various (TP53,19q, 7q) cytogenetic abnormalities were shown, the etiology is still not clear.^{2,3} UES can arise in the mesenchymal hamartoma of the liver. In both lesions cytogenetic abnormalities seen at

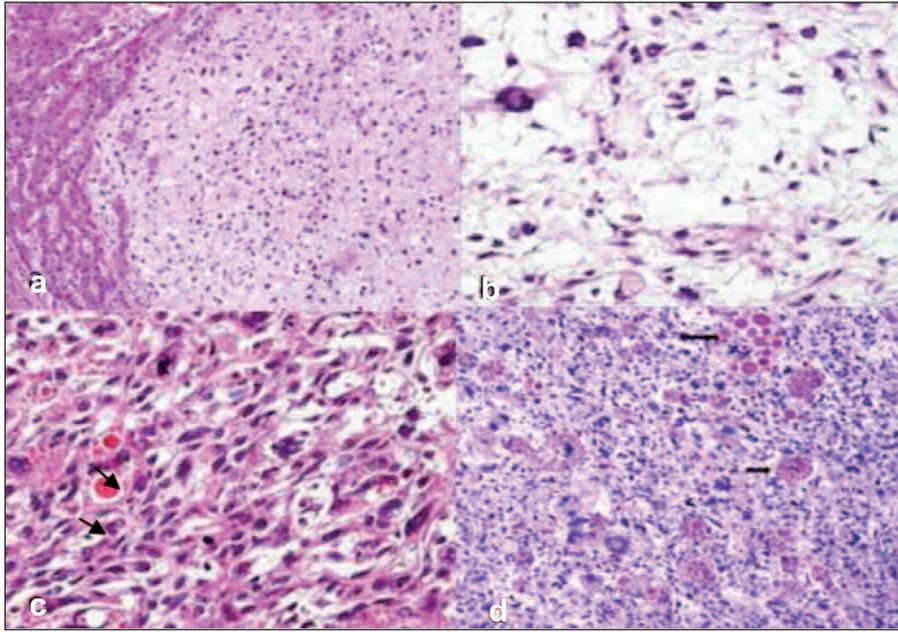


FIGURE 2: (a) In the microscopic examination, tumor cells separated from adjacent liver tissue with smooth borders (H&EX100). (b) Myxoid ground between some bazaar tumor cells (H&EX200). (c) Presence of intra- and extracellular eosinophilic globules (arrow) (H&EX200). (d) PAS positive diastase resistance globules (arrow) (X 200).

chromosome 19 gross pathology, histology and immunohistochemical findings are similar. UES may be accompanied by some other metachronous or synchronous neoplasms.⁴

Lung, pleura and peritoneum metastases occur frequently.¹ Generally, non-specific clinical signs such as weight loss, nausea, fatigue, vomiting, right upper quadrant pain and jaundice can be seen.^{5,6}

UES is not related to hepatic cirrhosis, and laboratory findings are non-specific. In CT examination, it has usually large solitary multi-cystic nature showing septation areas of necrosis and hemorrhage and well-defined cyst. While it is often located in the right lobe it may also be seen in the left lobe and in the bilobar place.⁶ Approximate tumor size is 10 cm. Tumor may have pseudocapsule. Histopathologic examination shows oval, spindle-shaped, stellate, dark colored, partly pleomorphic tumor cells lying on myxoid background. PAS positive diastase resistant globules are available both in tumor cell cytoplasm and intercellular spaces. Cellularity may be markedly increased and may be fascicular in some part of the tumor. Around the tumoral areas, enlarged biliary canals may be seen.⁵

In immunohistochemical studies, vimentin, CD68, alpha-1 antitrypsin reactivity may be seen in addition to smooth muscle differentiation, and this differentiation is more widely seen in adulthood rather than childhood. Since UES can also show Glypican-3 expression, other markers are needed for differentiation from sarcomatoid hepatocellular carcinoma especially in needle biopsies.

In adulthood, pleomorphic sarcoma, metastatic gastrointestinal stromal sarcoma, poorly differentiated hepatocellular carcinoma or sarcomatoid variant of hepatocellular carcinoma, metastatic sarcomatoid carcinoma and angiomyolipoma are involved in differential diagnosis. The recurrence ratio after surgery is higher in the first two years. The important factors for recurrence and mortality are early spontaneous or iatrogenic rupture and tumors remaining in the resection margins.⁵ Prognosis is not correlated with the tumor diameter or with the differentiation but it is related to invasion and metastasis.⁷ Although the prognosis is poor, chemotherapy and/or radiotherapy treatment after complete

surgery can be more effective.⁵ Radiotherapy is rarely used and it is mostly preferred for the patients who are not operated and the patients who are not treated with complete surgical resection. Since these tumors tend to be large in size, preoperative chemotherapy can give opportunity to complete resection by providing shrinkage in the tumor.⁸

Clinical, radiological and laboratory findings of UES are not specific and a wide range of differential diagnosis is available before and after histopathologic examination. UES is an aggressive tumor rarely presented in adults. However, longer survival may be possible with the complete resection and effective adjuvant/neoadjuvant therapy.

REFERENCES

1. Stocker JT, Ishak KG. Undifferentiated (embryonal) sarcoma of the liver: report of 31 cases. *Cancer* 1978;42(1):336-48.
2. Varol U, Karaca B, Muslu U, Doğanay L, Değirmenci M, Uslu R, et al. Undifferentiated embryonal sarcoma of the liver in an adult patient: case report. *Turk J Gastroenterol* 2012;23(3):279-83.
3. Hu X, Chen H, Jin M, Wang X, Lee J, Xu W, et al. Molecular cytogenetic characterization of undifferentiated embryonal sarcoma of the liver: a case report and literature review. *Mol Cytogenet* 2012;5(1): 26.
4. Gasljevic G, Lamovec J, Jancar J. Undifferentiated (embryonal) liver sarcoma: synchronous and metachronous occurrence with neoplasms other than mesenchymal liver hamartoma. *Ann Diagn Pathol* 2011;15(4): 250-6.
5. Pachera S, Nishio H, Takahashi Y, Yokoyama Y, Oda K, Ebata T, et al. Undifferentiated embryonal sarcoma of the liver: case report and literature survey. *J Hepatobiliary Pancreat Surg* 2008;15(5):536-44.
6. Chocarro G, Amesty MV, Henandez F, Chenu BG, Ortiz R, Hernandez S, et al. Embryonal sarcoma of the liver. *Pediatr Surg Int* 2013;29(12):1261-6.
7. Bisogno G, Pilz T, Perilongo G, Ferrari A, Harms D, Ninfo V, et al. Undifferentiated sarcoma of the liver in childhood: a curable disease. *Cancer* 2002;94(1):252-7.
8. Wei ZG, Tang LF, Chen ZM, Tang HF, Li MJ. Childhood undifferentiated embryonal liver sarcoma: clinical features and immunohistochemistry analysis. *J Pediatr Surg* 2008; 43(10):1912-9.