ARCHIVES OF HELLENIC MEDICINE: ISSN 11-05-3992

CONTINUING MEDICAL EDUCATION
ΣΥΝΕΧΙΖΟΜΕΝΗ ΙΑΤΡΙΚΗ ΕΚΠΑΙΔΕΥΣΗ

ARCHIVES OF HELLENIC MEDICINE 2017, 34(4):567–568
ΑΡΧΕΙΑ ΕΛΛΗΝΙΚΗΣ ΙΑΤΡΙΚΗΣ 2017, 34(4):567–568

Medical Imaging Quiz – Case 45

E. Botsa,[1]
I. Thanou,[2]
E. Gerardos,[2]
L. Thanos[2]

[1]First Pediatric Clinic, "Aghia Sophia" Children's Hospital, National and Kapodistrian University of Athens, School of Medicine, Athens
[2]Department of Medical Imaging and Interventional Radiology, "Sotiria" General Hospital of Chest Diseases, Athens, Greece

A 45-year-old female patient with thalassemia presented to the emergency department due to persistent pain of the left humerus and thoracic spondyls. X-rays were performed and revealed osteolytic lesion of the left humerus and thoracic spondyls (fig. 1). Magnetic resonance imaging (MRI) of thoracic spine confirmed the osteolytic lesions of two thoracic spondyls (fig. 2). Abdominal ultrasound was done and showed a large liver lesion (fig. 3). Imaging findings were compatible with metastatic disease; thus computed tomography (CT) guided fine needle bone and liver biopsies were performed and confirmed the diagnosis.

Comment

Thalassemics are often infected with either hepatitis C virus or hepatitis B virus, and frequently have hemochromatosis. Hepatocellular carcinoma (HCC) has emerged in thalassemics only recently as a result of the improvement in thalassemia outcomes. In fact, a prospective study estimated an HCC incidence in β-thalassemia of about 2%. HCC is one of the most common carcinomas. Due to development of diagnosis and treatment in recent years, the overall survival rate of HCC patients has increased. However, there is also a higher chance for bone metastasis. Extrahepatic metastasis of HCC has been known to be uncommon, and bone metastasis as the first manifestation of extrahepatic HCC seldom occur; therefore only several case reports have been reported. The most frequently involved sites of extrahepatic metastasis were lung, lymph node, musculoskeletal, and adrenal gland in order of frequency. The most of musculoskeletal involvements (66%) already had multiple other

Figure 1. X-ray revealed extensive osteolytic lesion of the left humerus.

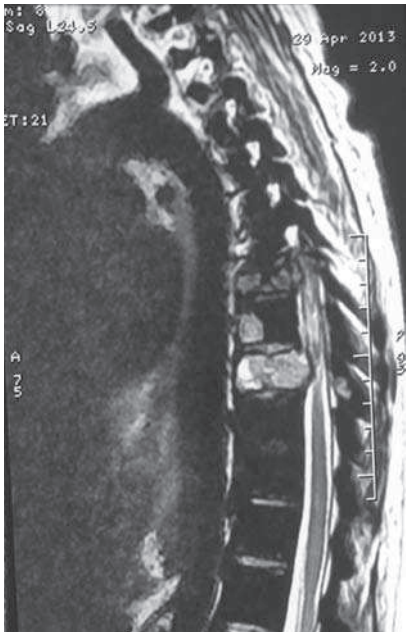

Figure 2. Magnetic resonance imaging of thoracic spine revealed osteolytic lesion.

Figure 3. Liver ultrasound revealed focal heterogeneous lesion.

non-osseous sites of metastatic disease at the time of manifestation of the first documented extrahepatic HCC. However, the isolated bone metastasis as the first manifestation was only seen in about 9.5% of patients.

Bone metastases induce pain, vertebral instability, vertebral compression, and limb movement disorders.

Lower thoracic and lumbar vertebrae metastases were most frequently observed. Involvement of the vertebral body was most common, and distribution in various sectors showed no significant difference. Involvement of the appendix sector was also common, and could exist independently of vertebral body metastasis; hence, extra attention should be paid when analyzing bone metastasis, in order to avoid missed diagnosis. Another major characteristic of bone lesions from HCC is the formation of soft tissue mass. Listing the bone metastasis screening test as routine examination for HCC patients would be beneficial for early discovery and diagnosis, and early treatment may help improve prognosis; existence of soft tissue mass may also affect the fractionation method and total dose of radiotherapy.

Since symptoms attributable to HCC are usually absent in early stage, liver ultrasonography and serum alpha-fetoprotein (AFP) are used for the surveillance of HCC in high risk group. While surgery is the curative and most optimal therapy, for patients ineligible for surgery, locoregional and or systemic therapies can be applied in anticipation of survival benefit. Among locoregional therapies, percutaneous radiofrequency ablation (RFA), percutaneous ethanol injection (PEI), and transarterial embolization (TACE) were widely accepted.

Surveillance of HCC in high risk group and locoregional/ systemic therapies to patients ineligible for surgery have prolonged the survival of HCC, and the incidence of extrahepatic metastases seems to be increasing accompanied with the prolonged survival of HCC.

References

1. MOUKHADDER HM, HALAWI R, CAPPELLINI MD, TAHER AT. Hepatocellular carcinoma as an emerging morbidity in the thalassemia syndromes: A comprehensive review. *Cancer* 2017, 123:751–758
2. BORGNA-PIGNATTI C, GARANI MC, FORNI GL, CAPPELLINI MD, CASSINERIO E, FIDONE C ET AL. Hepatocellular carcinoma in thalassaemia: An update of the Italian Registry. *Br J Haematol* 2014, 167:121–126
3. TINKLE CL, HAAS-KOGAN D. Hepatocellular carcinoma: Natural history, current management, and emerging tools. *Biologics* 2012, 6:207–219
4. CHEN HY, MA XM, BAI YR. Radiographic characteristics of bone metastases from hepatocellular carcinoma. *Contemp Oncol (Pozn)* 2012, 16:424–431
5. KUMMAR S, SHAFI NQ. Metastatic hepatocellular carcinoma. *Clin Oncol (R Coll Radiol)* 2003, 15:288–294
6. KATYAL S, OLIVER JH 3rd, PETERSON MS, FERRIS JV, CARR BS, BARON RL. Extrahepatic metastases of hepatocellular carcinoma. *Radiology* 2000, 216:698–703
7. KANDA M, TATEISHI R, YOSHIDA H, SATO T, MASUZAKI R, OHKI T ET AL. Extrahepatic metastasis of hepatocellular carcinoma: Incidence and risk factors. *Liver Int* 2008, 28:1256–1263
8. KIM SU, KIM DY, PARK JY, AHN SH, NAH HJ, CHON CY ET AL. Hepatocellular carcinoma presenting with bone metastasis: Clinical characteristics and prognostic factors. *J Cancer Res Clin Oncol* 2008, 134:1377–1384

Corresponding author:

L. Thanos, Department of Computed Tomography, "Sotiria" General Hospital of Chest Diseases, 152 Mesogeion Ave., 115 27 Athens, Greece
e-mail: loutharad@yahoo.com