ISSN : 2309-3234

TMSS MEDICAL COLLEGE JOURNAL

Volume 05, No. 02, July 2015

An Official Publication of TMSS Medical College, Bogra

TMSS Medical College Journal

July 2015

An Offical Publication
of
TMSS Medical College, Bogra

TMSS Medical College Journal

Vol. 05, No. 02, July 2015

An Offical Publication of TMSS Medical College, Bogra, Bangladesh

Published by

Dr. Md. Abdul Mazid
on behalf of the TMSS Medical College

Graphic Designer

Md. Sirajul Islam
TMSS, Bogra

Printed by

TMSS Printing Press
Bogra, Bangladesh

Address of Correspondence

Executive Editor, TMSS Medical College Journal
TMSS Medical College, Rangpur Road
Thengamara, Bogra, Bangladesh.
Phone: 051-61830, Fax : 051-61830
e-mail: editortmcjournal@gmail.com
Web: www.tmssmedicalcollege.com

Primary Hepatic Neuroendocrine Carcinoma: A Case Presentation

Islam ASMS[1*], Rahman AKMM[2], Rahman MM [3], Zaman MA[4], Mamun AA[5], Kamal M[6], Rahman S[7]

1. Dr. Abu Saleh Md. Sadequl Islam, Resident Physician of Medicine, Shaheed ZiaurRahman Medical College Hospital, Bogra.
2. Dr. A. K. M. Masudur Rahman, Assistant Professor of Medicine, Shaheed ZiaurRahman Medical College, Bogra.
3. Dr. Md. Mahbubur Rahman, Medical officer, Shaheed ZiaurRahman Medical College Hospital, Bogra.
4. Dr. Md. Asaduzzaman, Lecturer of Biochemistry, Khulna Medical College, Khulna.
5. Dr. Ayub Al Mamun, Associate Professor of Hepatology, Bangabandhu Sheikh Mujib Medical University, Dhaka.
6. Dr. Mohammmad Kamal, Professor and Chairman, Department of Pathology, Bangabandhu Sheikh Mujib Medical University, Dhaka.
7. Dr. Salimur Rahman, Professor of Hepatology, Bangabandhu Sheikh Mujib Medical University, Dhaka.

* Corresponding Author.

Abstract

Primary hepatic neuroendocrine carcinomas (PHNECs) are exceedingly rare and unlike metastatic neuroendocrine tumor rarely cause carcinoid syndrome. We present a case of a 54 -year-old male with a primary hepatic neuroendocrine carcinoma which presented as abdominal discomfort and fatigue. The case presented required meticulous radiological, histopathological, and serological work-up to rule out an occult extrahepatic malignancy with hepatic metastasis to confirm the primary nature of hepatic tumors.

Keywords : Neuroendocrine tumor, immunohistochemistry, liver.

Introduction

Neuroendocrine tumors develop in organs or tissues that contain peptide- and amine-producing cells with different hormonal profiles depending on their site of origin.[1] Of all neuroendocrine tumors, approximately 57.0% and 27.0% arise within the gastroenteropancreatic system and bronchopulmonary system, respectively.[2] Within the gastrointestinal tract, most neuroendocrine tumors occur in the rectum (17.2%), jejunum/ileum (13.4%), and pancreas (6.4%).[2] Primary hepatic neuroendocrine carcinomas (PHNECs) are extremely rare. We present the case of a man with Primary hepatic neuroendocrine carcinoma.

Case Report

A 54 year old non-diabetic, normotensive man presented with abdominal discomfort andfatigue for last 6 months. He is smoker for last 1 years and past medical history revealed known case of gall stone disease since last year. He is the fourth child in his family with no history of diabetes or other auto immune diseases among family members. He gives no history of flushing, diarrhea, palpitation or wheeze. Physical examination reveals an afebrile, non- anemic, non-icteric, no pitting pedal oedema and blood pressure was 120/70 mm Hg; a pulse of 78 beats/ min; and a respiratory rate of 18 breaths/ min. Abdomen is soft, non-tender, no organamegaly and normal audible bowel sounds. Hiscardiovascular, pulmonary and neurological exams are all benign. Serum creatinine is within the normal range. Liver function tests reveals bilirubin 11umol/L (normal <20umol/L), alanine aminotransferase (ALT) 31 IU/L (normal <50IU/L), alkaline phosphatase 187 IU/L, (normal <350IU/L), LDH 253 (normal range: < 400 U/L) and albumin 39 g/L (normal range: 35 to 45g/L). Complete blood counts with PBF also normal.Serum biochemistry shows fasting blood glucose level of 88 mg/dL (normal range: 82 to 110mg/dL), potassium: 4.4 mmol/L (normal range 3.5 to 5), sodium 137 mmol/L (normal range: 130 to 145) and calcium 9.2 mg/dL (normal range: 8 to 10.5). Chronic Viral hepatitis screens (HBsAg, Anti HBc& Anti-HCV), TPHA and Anti HIV (1 &2) are negative. Thyroid function tests are normal. Tumor markers including AFP 1.7 ng/mL (normal: <15), CEA4.5 ng/mL (normal <5), PSA 1.4ng/ml (normal range: < 4) and CA19.9 20.2

U/ml (normal range: < 18.3) are normal ranges. Ultrasound of the abdomen reveals multiple hyper echoic lesions occupying both lobes and multiple echogenic structures in the gall bladder which has posterior acoustic shadow (Figure1). An abdominal computerized tomography (CT) scan with contrast is obtained, which reveals multiple hyper dense space-occupying lesions in the both lobes of liver (Figure-2) with no other intra-abdominal masses or lymphadenopathy. FNAC and Core liver biopsy consisted of tumor cells arranged in glandular, trabecular, and organoid nests of uniform, intermediate-sized, polyhedral cells in a vascular stroma suggestive of Neuroendocrine carcinoma. Endoscopy of upper GIT shows pre-pyloric erosions. Full colonoscopy (Figure-1) shows multiple erythematous ulcerative lesions involving sigmoid colon, descending colon, small part of transverse colon and rectum. Intervening mucosa and vascular patterns appears normal. Bleeds a little after biopsy taken. Biopsy revealed the lamina propria contains increased number of chronic inflammatory cells. No granuloma or malignancy is seen which suggest non-specific colitis. Ten days after parenteral antibiotics repeat colonoscopy reveals normal study. Both X-ray and computerized tomography (CT) scan of the chest reveals negative for mass or mitotic lesions. PlasmaChromogranin A is performed &level 762 ng/ml (normal range: < 100) and 24 hours urinary 5- HIAA is 4.50 mg (normal range: 0.7- 8.2)

Based on combinations of histopathology, PlasmaChromogranin A and exclusions of others primary like chest radiography, upper and lower gastrointestinal endoscopy a diagnosis of Primary hepatic neuroendocrine carcinoma is made.

Discussion

Primary neuroendocrine tumor of liver is rare and was first described by Edmonson in 1958. It represents 0.3% of all carcinoids.[3] Females are affected slightly more often than males (1.4:1) and the age group of affected patients ranges from 18 to 84 with an average age of 54 years.[4] Our patient is middle age.

Primary hepatic neuroendocrine tumors may be an incidental finding or can present with severe symptoms including abdominal pain or discomfort, jaundice, palpable right upper quadrant mass, carcinoid syndrome, carcinoid heart disease, and Cushings syndrome. Interestingly, the carcinoid syndrome is rarely present in primary hepatic neuroendocrine tumors because hepatic enzymatic degradation of neoplastic-derived products spill directly into the portal circulation.[5-6] Our patient presented only with abdominal discomfort and no carcinoid syndrome.

The diagnosis of PHNECs is a debatable point. Because the liver is the most frequent metastatic site of neuroendocrine carcinomas, differential diagnosis between PHNECs and metastatic hepatic neuroendocrine carcinomas is very important for the diagnosis of PHNECs.[7] Therefore, only with careful analysis and after excluding extrahepatic origin of neuroendocrine carcinomas with liver metastasis, can PHNECs be diagnosed.[8,9] Octreotide scanning is a helpful technique for the diagnosis of neuroendocrine tumors, and its sensitivity is up to 90%.[10] However, some neuroendocrine tumors have a limited number of somatostatin-receptor sites that cannot be identified via an octreotide scan.[10] Whole-body PET-CT is also a useful imaging modality for the diagnosis of neuroendocrine tumors, but its sensitivity for detecting liver metastasis of neuroendocrine tumors is only 50.9%,[11] leading to the possibility of a misdiagnosed "primary" hepatic neuroendocrine carcinoma. Many patients are diagnosed with a single hepatic mass by a routine health examination that includes ultrasonography or CT. In previous studies, tumor markers such as AFP, CEA, or CA 19–9 did not have diagnostic value in PHNEC; almost all of them were within the normal limits.[12] In our study, all above tumor markers are negative. Earlier research reported that primary hepatic neuroendocrine tumors were immunoreactive for chromogranin A (89.1%),

neuron specific enolase (74.1%), and synaptophysin (48.9%), similar to other neuroendocrine tumors.[13] Plasma chromogranin A, which is used to diagnose and monitor neuroendocrine tumors during treatment and the diagnostic sensitivity and specificity of chromogranin A in neuroendocrine tumors at 71% and 87%, respectively.[14] Our study also showes plasmachromogranin A is increases.

There are several limitations due to lack of facilities and financial constraints immunohistochemical profile (synaptophysin, chromogranin and neuron-specific enolase on the biopsy specimen), PET, CT scan and octreotidescan not done.

Conclusion

Although PHNECs are very rare tumors, they should be considered as a possible differential diagnosis in the management of hepatic tumors. When a liver biopsy reveals that the hepatic tumor is a neuroendocrine tumor, careful search for other primary neuroendocrine tumor. Because it is usually common site for metastatic.However, the liver can be a primary site of origin for neuroendocrine tumors.

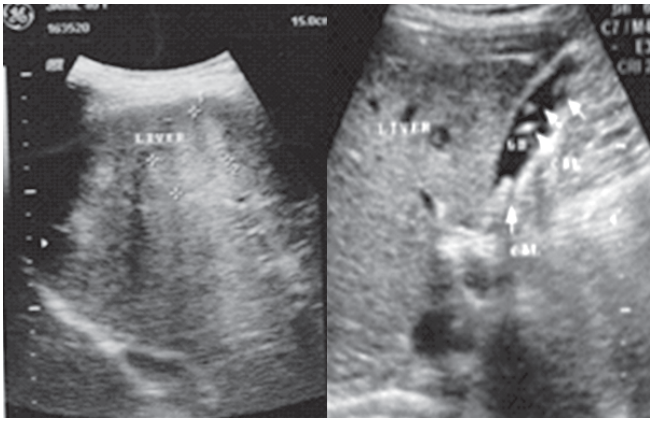

Figure 1: Shows multiple hyper echoic lesions occupying both lobes and multiple echogenic structures in the gall bladder which has posterior acoustic shadow.

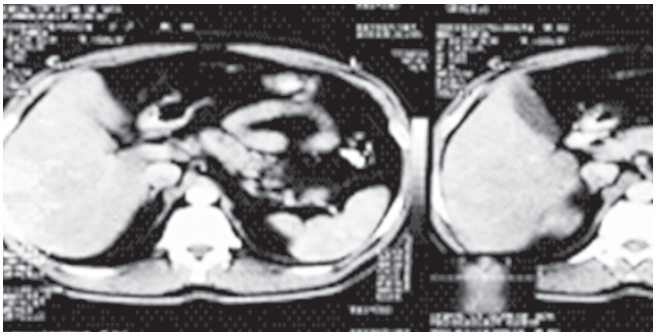

Figure 2: Multiple hyper dense space-occupying lesions in the both lobes of liver.

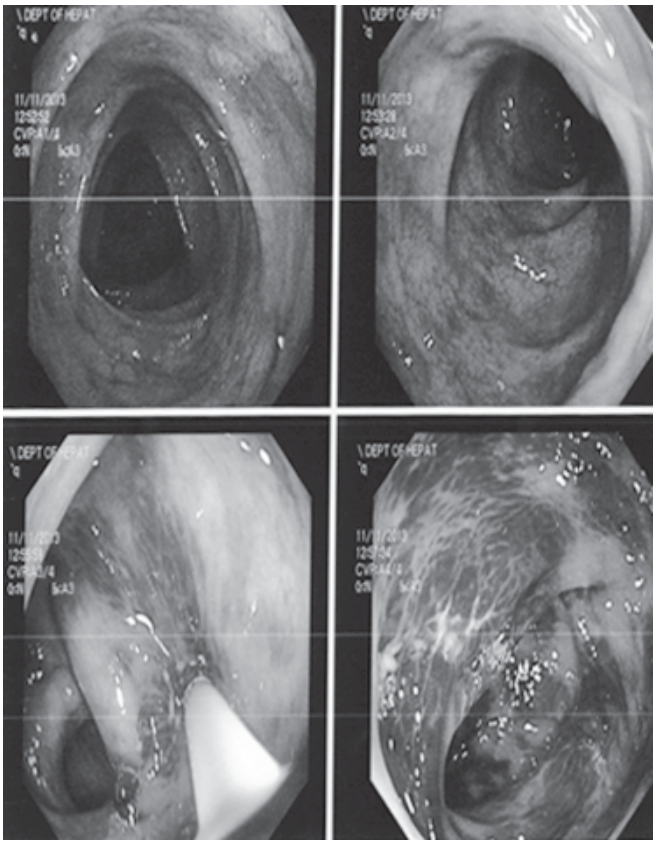

Figure 3: Shows multiple erythematous ulcerative lesions involving sigmoid colon, descending colon, small part of transverse colon and rectum. Intervening mucosa and vascular patterns appears normal. Bleeds a little after biopsy taken

References

1. Kloppel G, Heitz PU. Classification of normal and neoplastic neuroendocrine cells. Ann. N. Y. Acad. Sci. 1994; 733: 19–23.
2. Yao JC, Hassan M, Phan A et al. One hundred

years after "carcinoid": epidemiology of and prognostic factors for neuroendocrine tumors in 35 825 cases in the United States. J. Clin. Oncol. 2008; 26: 3063–72.

3. Caplin ME, Buscombe JR, Hilson AJ, Jones AL, Watkinson AF, Burroughs AK. Carcinoid tumor. Lancet 1998;352:799-805.
4. Soga J. Primary hepatic endocrinomas (carcinoids and variant neoplasms). A statistical evaluation of 126 reported cases. J ExpClin Cancer Res 2002; 21:457-68
5. Tohyama T, Matsui K, Kitagawa K. Primary hepatic carcinoid tumor with carcinoid syndrome and carcinoid heart disease: A case report of a patient on long-term follow-up. Intern Med 2005; 44:958-62.
6. Shah NA, Urusova IA, DAgnolo A, Colquhoun SD, Rosenbloom BE, Vener SL, et al. Primary hepatic carcinoid tumor presenting as Cushings syndrome. J Endocrinol Invest 2007; 30:327-33
7. Ruckert RI, Ruckert JC, Dorffel Y, Rudolph B, Muller JM. Primary hepatic neuroendocrine tumor: successful hepatectomy in two cases and review of the literature. Digestion 1999; 60: 110–16.
8. Iwao M, Nakamuta M, Enjoji M et al. Primary hepatic carcinoid tumor: case report and review of 53 cases. Med. Sci. Monit. 2001; 7: 746–50.
9. Kaya G, Pasche C, Osterheld MC, Chaubert P, Fontolliet C. Primary neuroendocrine carcinoma of the liver: an autopsy case. Pathol. Int. 2001; 51: 874–8.
10. Critchley M. Octreotide scanning for carcinoid tumours. Postgrad. Med. J. 1997; 73: 399–402.
11. Seemann MD, Meisetschlaeger G, Gaa J, Rummeny EJ. Assessment of the extent of metastases of gastrointestinal carcinoid tumors using whole-body PET, CT, MRI, PET/CT and PET/MRI. Eur. J. Med. Res. 2006; 11: 58–65.
12. Huang YQ, Xu F, Yang JM, Huang B. Primary hepatic neuroendocrine carcinoma: clinical analysis of 11 cases. HepatobiliaryPancreat. Dis. Int. 2010; 9: 44–8.
13. Lin CW, Lai CH, Hsu CC et al. Primary hepatic carcinoid tumor: a case report and review of the literature. Cases J. 2009; 2: 90–5.
14. Donica H, Malecha-Jedraszek A, Stroslawska E, Burska A, Szubstarski F. Significance of plasma chromogranin A determination in neuroendocrine tumour (NET) diagnosis. Folia Histochem. Cytobiol. 2010; 48: 603–10.