

Policeman to the Rescue; A Case of Ruptured Hepatocellular Carcinoma

CHIRAG PEREIRA¹, LEO F. TAURO¹, EREL DIAZ¹

¹Department of General Surgery, Father Muller Medical College and Hospital, Mangalore, India

ABSTRACT: Spontaneous rupture of hepatocellular carcinoma (HCC) are rare. Most cases present with acute abdominal pain and hemorrhagic shock. Various modalities of treatment are available which range from conservative treatment to surgical excision of the tumour. Various factors have to be considered when deciding on the treatment, but patient prognostic factors is the key in decision making. In this case we decided on an early laparotomy and surgical excision of the tumor since the patient was hemodynamically stable and as the omentum adhered to the site of rupture. Treatment in these cases requires a multidisciplinary approach to decide on the best possible procedure for each case.

KEYWORDS: HCC, Hepatocellular carcinoma, Tumor rupture.

Introduction

The fourth most common cancer worldwide is hepatocellular carcinoma (HCC) [1].

While tumor cachexia and liver failure are the most common causes resulting in death in HCC, the third most common cause is spontaneous tumor rupture.

This can occur in 3 to 15% of cases [2] resulting in life threatening hemorrhage with a mortality as high as 75% [3,4].

It was initially reported that only large tumors have a tendency to rupture but small tumors with aggressive behavior are just as dangerous.

We report an interesting case of a 74-year-old female patient diagnosed with a ruptured HCC where the policeman of the abdomen i.e. the omentum got adhered to the ruptured site and arrested the bleeding.

Case Report

A 74-year-old female patient was referred to us from a district hospital following a two-day period of acute onset abdominal pain and vomiting.

Patient was received in the emergency department of Father Muller Medical College and Hospital, Mangalore, India. She had stable vital signs and widespread abdominal tenderness.

Further abdominal examination showed a large abdominal mass extending down beyond the umbilicus with partial mobility.

Blood investigations showed total bilirubin of 1.54mg/dl and serum alfa fetoprotein of 23585ng/ml.

Serological markers for hepatitis B and C were negative.

Patient underwent a contrast enhanced computed tomography (CECT) of abdomen which showed hyperdense exophytic lesion measuring 11x14x14cm arising from left lobe of liver with fat stranding in inferior margin of liver (Figure 1).

Based on Milan criteria advanced HCC was diagnosed.

A multidisciplinary meeting was held to decide on the next course of treatment. In view of the patient stable condition, she was planned for an early laparotomy.

Intra-operative findings revealed a large hepatic tumor with the omentum adherent to the site of ruptured tumor which might be the reason why the patient was stable and not in hemorrhagic shock (Figure 2).

Minimal hemoperitoneum was also noted.

A wedge resection was performed with removal of segment four and three (Figure 3) and hemostasis achieved by bipolar cautery.

Patient did not have any postoperative complications and abdominal drain was taken out by the 5th postoperative day.

Histopathology was performed in our hospital which revealed moderately differentiated hepatocellular carcinoma (Grade 2) with uninvolved surgical margins.

Microscopy showed polygonal tumor cells with pleomorphic central nucleus, coarse chromatin, occasional nucleoli and vacuolated cytoplasm (Figure 4).

Informed consent was obtained from the patient for publication of images and above-mentioned data.

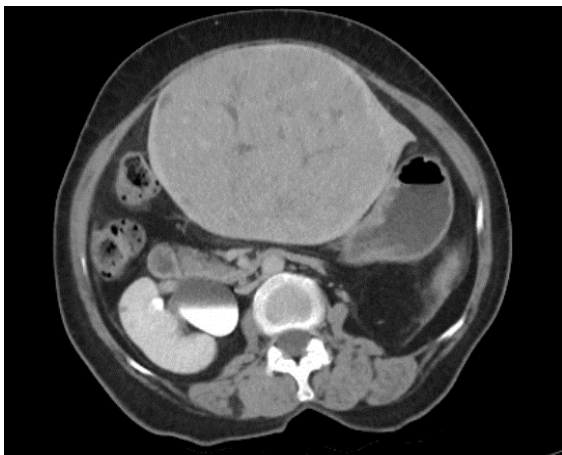


Figure 1. CECT showing Liver Tumour.

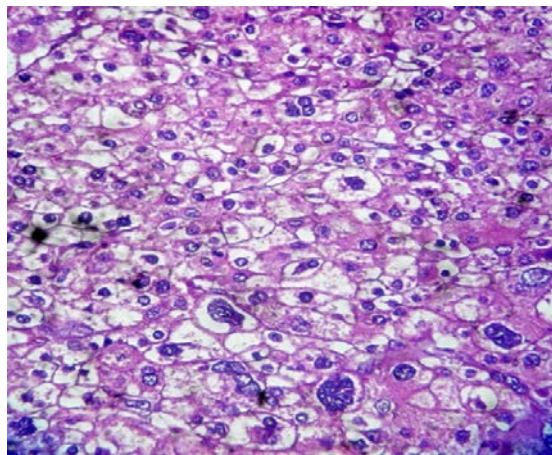


Figure 4. Moderately differentiated hepatocellular carcinoma, HE staining, 40x.

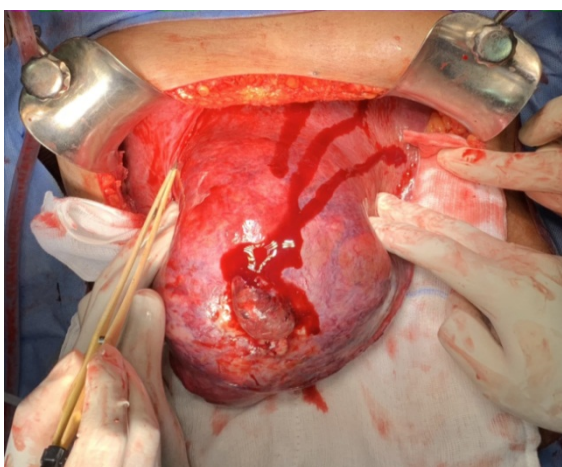


Figure 2. Intra-operative picture of Liver Tumour showing ruptured site.



Figure 3. Excised Liver Tumour.

Discussion

The main risk factors for HCC are excessive alcohol consumption, liver cirrhosis, aflatoxin intoxication, Hepatitis B and C infection, family history of malignant tumor disease and hormonal therapy.

Our patient did not have any of these risk factors. The exact etiology behind rupture of HCC is unknown but may be due to excessive tumor growth and necrosis and erosion of vessel by tumor [2].

The most common symptom of HCC rupture is acute abdominal pain.

This may be associated with features of shock if significant bleeding has occurred from the tumor.

The most useful tools in the initial diagnosis of a ruptured HCC are ultrasound and contrast enhanced computed tomography (CECT) [5].

The characteristic findings of HCC on CECT are early arterial phase enhancement and contrast attenuation in delayed phase [6] which were consistent with CECT findings in our patient.

Management of HCC is dependent on the clinical stage of the disease.

However, handling complication of HCC such as a tumor rupture can be challenging. Most cases of ruptured HCC present with intraperitoneal hemorrhage which can be life threatening if immediate measures are not undertaken [7].

The main aim of treating a ruptured HCC is to achieve hemostasis, preserve as much liver function as possible and in turn save the patient's life.

Various modalities of treatment available to treat a ruptured HCC include conservative treatment, perihepatic packing, suture plication

of bleeding tumor, absolute alcohol injection, hepatic artery ligation, transarterial embolization (TAE), emergency liver resection and staged resection [8].

Patients that are hemodynamically stable can be management by conservative means which involves close monitoring and correction of coagulopathy if present [8].

Unstable patients on the other hand require a definitive approach.

TAE has gained significant popularity over surgery over the past three decades.

A meta-analysis by Xu et al [9] found that both TAE and surgery are equally effective in achieving hemostasis but TAE was found to be superior when it came to in hospital mortality and post procedural complications.

Some centers may not have access to TAE facilities and in these areas, surgery should be the first line of treatment.

Fortunately for us, the bleeding had seized as the omentum adhered to the site of tumor rupture and we decided on an early laparotomy as the best possible treatment for our patient instead of performing a TAE.

Conclusions

Spontaneous rupture of HCC is a surgical emergency that requires early diagnosis and prompt treatment.

A multidisciplinary team approach is crucial in handling these cases.

Our patient had an excellent recovery without complications due to early intervention.

Conflict of interests

None to declare.

References

1. Yang JD, Hainaut P, Gores GJ, Amadou A, Plymoth A, Roberts LR. A global view of hepatocellular carcinoma: trends, risk, prevention and management. *Nat Rev Gastroenterol Hepatol*, 2019, 16(10):589-604.
2. Bassi N, Caratozzolo E, Bonariol L, Ruffolo C, Brida A, Padoan L, Antoniutti M, Massani M. Management of ruptured hepatocellular carcinoma: implications for therapy. *World J Gastroenterol*, 2010, 16(10):1221-1225.
3. Aoki T, Kokudo N, Matsuyama Y, Izumi N, Ichida T, Kudo M, Ku Y, Sakamoto M, Nakashima O, Matsui O, Makuuchi M. Prognostic Impact of Spontaneous Tumor Rupture in Patients With Hepatocellular Carcinoma: An Analysis of 1160 Cases From a Nationwide Survey. *Ann Surg*, 2014, 256(3):532-542.
4. Liu CL, Fan ST, Lo CM, Tso WK, Poon RT, Lam CM, Wong J. Management of spontaneous rupture of hepatocellular carcinoma: single-center experience. *J Clin Oncol*, 2001, 19(17):3725-3732.
5. Özen Ö, Tosun A, Akgül Ç. Spontaneous rupture of multifocal hepatocellular carcinoma: case report. *Int Med Case Rep J*, 2015, 8:165-167.
6. Bolog N, Andreisek G, Oancea I, Mangra A. CT and MR imaging of hepatocellular carcinoma. *J Gastrointestin Liver Di*, 2011, 20(2):181-189.
7. Yang H, Chen K, Wei Y, Liu F, Li H, Zhou Z, Li B. Treatment of spontaneous ruptured hepatocellular carcinoma: A single-center study. *Pak J Med Sci*, 2014, 30(3):472-476.
8. Lai ECH, Lau WY. Spontaneous Rupture of Hepatocellular Carcinoma: A Systematic Review. *Arch Surg*, 2006, 141(2):191-198.
9. Xu X, Chen C, Liu Q, Huang X. A Meta-analysis of TAE/TACE Versus Emergency Surgery in the Treatment of Ruptured HCC. *Cardiovasc Intervent Radiol*, 2020, 43(9):1263-1276.

*Corresponding Author: Chirag Pereira, Department of General Surgery,
Father Muller Medical College and Hospital, Mangalore-575002, India,
e-mail: chiggy1989@gmail.com*