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Case Report

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Primary Hepatocellular Carcinoma in an Adolescent Male/An Adult Female

Clive A L Thomas[1]*, G Smith[1], C Morris[1] and J Thame[2]

[1]*Consultant General Surgeon*

[2]*Hematology, Oncology*

***Corresponding author**
Dr. Clive A. L. Thomas, F.R.C.S., F.I.C.S., F.A.C.S. Consultant General Surgeon, Jamaica, E-mail: surgcathomas@gmail.com

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Introduction

The aim of this research paper is to compare and contrast two (2) cases of Primary Hepatocellular Carcinoma; reviewing aetiology, presenting symptoms, diagnosis, imaging modalities, surgical oncological resection margins and techniques to minimize blood loss, and post-operative therapy to improve survival of this disease which sometimes have a poor prognostic outcome.

Case 1

K. B. – Age 18 years

He was referred from the clinic with history of Hepatomegaly and Anaemia.
He gave a history of:
Right sided abdominal pain and mass for 1 year, cramping, non-radiating, relieved by aspirin.
Dizziness and difficulty in breathing for 1 year Weight loss - 25 lbs. and fever on and off
No other constitutional symptoms, gastrointestinal symptoms or jaundice
History of bush tea ingestion for 10 years, and eating raw peanuts for 10 years daily.

The Examination revealed

Liver 6cm – 7cm below right costal margin span 16cm with a mild splenic enlargement

The Diagnosis of

Hepatomegaly and Splenomegaly was entertained

With a differential Diagnosis of

Lymphoproliferative Disorder
Infiltrative Disease
Immunocompromised

The Blood Investigations showed

Hb – 11.5
WBC – 7.6
Platelets – 320
Total proteins – 71
Albumin – 31
Globulin – 40
Total Bilirubin - 6.8
GGT – 66 ALK. PHOSP. – 106 ALT – 49 AST – 42

Ultrasound Imaging showed
Liver enlarged > 16.3cm in MCL.
7cm x 8cm x 3cm hypoechoeic lesion in right lobe.
Gall bladder, spleen, pancreas and kidneys normal. No para aortic nodes or free fluid.

The Impression of

Hepatocellular Carcinoma or Liver Metastasis

Repeated Blood Investigations after ten (10) days revealed

Hb – 11.5
WBC – 6.9
Platelets – 422
Alk. Phosp. – 108
ALT – 42
AST – 39

Hepatitis B – negative
Ultrasound Guided Liver Biopsy was attempted one pass of needle only,

Liver Biopsy/Histology

Showed well differentiated Hepatocellular Carcinoma with Pseudoglandular pattern in Cirrhosis of Liver

Chest X-ray P.A. – Normal

The Repeated Abdominal Ultrasound five (5) weeks after initial ultrasound Right lobe show a lobular mass lesion totally involving the right lobe of liver with focus of calcification noted and hepatic vein effacement

No venous thrombosis and left lobe is normal, otherwise normal

The Clinical Impression

Fibrolamellar Type Hepatocellular Carcinoma

A Hepatic Angiogram was performed
Via right femoral artery the common hepatic artery was catheterized
A very large mass with abnormal tumour vascularity is seen involving

the whole of the right lobe.

The Hepatic Angiogram showed
The mass is supplied by the right hepatic artery no abnormal tumour vascularity was seen in the left lobe of liver.

The Impression of a
Very large right hepatic mass, Hepatocellular Carcinoma (HCC)

The CT Scan – Abdomen showed
Liver enlarged with large mass in right lobe 20cm x 11cm x 9 cm involving segments IV, V, VI, VII, VIII.
No para-aortic nodes or free fluid noted
All other organs normal

The Diagnosis of:
Fibrolamellar HCC was given

The Surgery – Two (2) months after initial presentation showed
- Laparotomy and Inverse Y Shaped Incision
- Pre-op Rocephin and Flagyl with extended Right Hepatic Lobectomy

The Findings were
- Extensive bulky tumour of liver involving entire right lobe infiltrating into gall bladder fossa segment IV
- An enlarged node overlying hepatic artery no peritoneal seedling, other organs normal

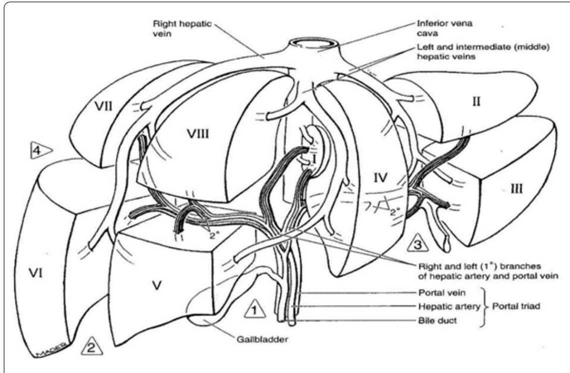


Figure 1: Anatomy of Liver Segments

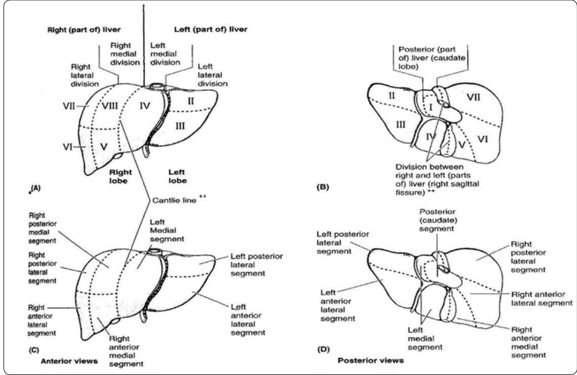


Figure 2: Anatomy of Liver Segments

The Procedure as follows
Liver mobilized and falciform ligament, coronary and right triangular ligaments and Hilum dissected. Right hepatic duct and cystic duct identified – divided and right hepatic artery ligated along with right branch of portal vein.

Extended right hepatic lobectomy done by dissecting in falciform, ligament fissure. Ligaclips ligated. Caudate lobe left in situ. Thrombin glue applied and omental patch sutured in place.
Estimated blood loss 8 litres. Transfused 6 litres of whole blood and 2 litres of F.F.P.
Right Basal Chest Tube inserted

The Duration of Surgery was 11½ hours
Patient was admitted to Intensive Care Unit for elective ventilation and monitoring of vital signs, urinary output.

On day 3 Post-op
He began oral fluids
Right Chest Tube (Thoracostomy Tube) monitoring minimal drainage noted.
Subhepatic drain approximately 1 – 2 litres (blood/bile stained) per day fluid)

On day 5 Post-op

Hb - 14-6	WBC - 10.6	Alb - 23
Glob - 31	Alk. Phosp. - 133	ALT – 72
AST - 139	Total Bili – 32.4	D – 13.5
I – 18.9		

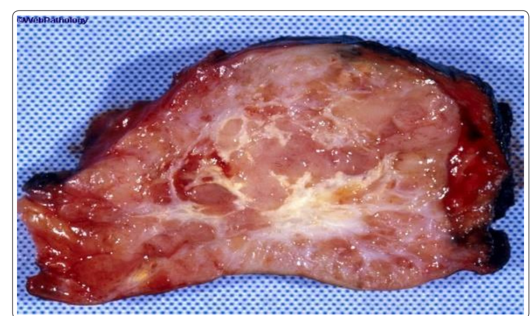
On day 8 post-op
Patient was discharged from ICU

On day 10
Patient's chest tube was extubated. He was maintained on high calorie, low protein diet. Chest physiotherapy was an integral part of post-op treatment.

On day 14
Repeat LFT's – approaching normal

On day 16
Patient was discharged from the Surgical Ward. He was referred to The Haematology/Oncology approximately 4 weeks post-surgery.

The Histology Specimen – showed
Partial Hepatectomy, 1 kg large nodular, tan greenish tissue approximately 13.5 cm
Neoplastic Hepatocytes, pleomorphism, hyperchromatism.
Pseudoglandular pattern a focus of suspicious vascular invasion.



The Diagnosis of
Well differentiated hepatocellular Carcinoma with Pseudoglandular pattern.

Summary of Post-operative Therapy
His Chemotherapy began approximately 6 weeks post-op.
Consisted single agent Adriamycin 105 mg along with Dexamethasone 20 mg.
Zofrin 8 mg and Gravol 50 mg.
He did 5 courses at 4 weekly cycles but defaulted to follow-up
He appears to be disease free 1 year and 3 months post-surgery

Case 2
S. D.: female d.o.b.: december 25, 1976 age: 42 years
The Diagnosis of:
Liver Cancer – November 2014
Her symptoms included:
30 pounds weight loss, appetite down, abdominal pains and discomfort around waist. Para $2+^0$
There was a strong family history:
Liver Cancer – Mother, 52 years; brother 25 years and sister 28 years, all died.
Hepatitis B positive for 5 years. Hypertension controlled on medication,
B.P. 130/80

On Examination
The positive findings abdominal were Hepatomegaly 4fb below RCM, span 16cm

The Diagnosis of
Hepatic Carcinoma Left Lobe & Segment, Right Lobe Segment VIII and IV

The initial course of treatment
Herbal medicine in Jamaica were initially started and comprised of herbal supplements:

Muscadine Grape Seeds Capsules b.d.
Artemisia b.d.
Milk Thistle 175 mg b.d.
Spirulina Capsules o.d.
Wheat Grass Liquid

This was later abandoned and traditional medicine was accepted.

The Pre-op CT Scan of
Abdomen and Pelvis showed large Tumour Segment VIII and Segment IVa with Stomach Mass Fundus

The Blood Investigations showed:
Hepatitis B surface/antigen Positive
Hepatitis Core ab (T) – Positive – deranged liver function tests LFT's

Alk Phosphatase	142	↑	(N 25 – 123)
CA 19-9	374	↑	(<40)
AST	115	↑	(N 25 – 123)
ALT	96	↑	(5 - 36)
GGT	569	↑	(9 – 36)
LDH	301	↑	(103.227)
Alpha Fetoprotein	>3,000		(0.5 - 5.5 In.) 1,045,711.9 max.

The Surgery – was performed four (4) months after diagnosis

The Laparotomy Extended Chevron – pre-op Rocephin 1 gram IV and Flagyl 500 mg IV.

The Surgery findings at Laparotomy were Tumour of Entire Left Lobe and Segment VIII Right Lobe, therefore, Left Hepatic Lobectomy and Partial Right Hepatectomy were performed.

The post-op course included
ICU Care – ventilation 48 hours.

Histology – SP15-0167
Resected Left Lobe and part of Right Lobe of Liver. Hepatocellular Carcinoma, Trabecular type, moderately differentiated. Vascular invasion (T4 NO MX). Weight 830 grams
Chronic Active Hepatitis was marked.

The Consultant Haematologist/Oncologist was consulted and The proposed referral for Direct Targeted Chemotherapy.

Primary Hepatocellular Carcinoma
Aetiology:

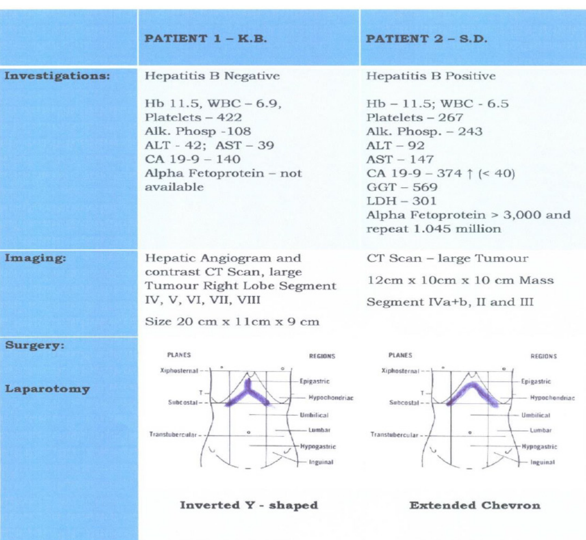
(a) Aspergillus Flavus and Aflatoxin Case 1

(b) Hepatitis B Infection Case 2

Summary and Comparison of Vital Statistics

	PATIENT 1 – K.B.	PATIENT 2 – S.D.
Age:	18 years	37 years
Year of presentation:	2002	2014
Sex:	Male	Female
Symptoms:	Right sided abdominal pain Dizziness and SOB Weight loss 25 pounds, fever+	Right sided abdominal pain 30 pounds weight loss, anorexic, nausea, no fever
Duration of infection:	10 years	5 years
Family History:	Nil	Mother, brother, sister died – Liver Cancer

Figure 4



	PATIENT 1 – K.B.	PATIENT 2 – S.D.
Investigations:	Hepatitis B Negative Hb 11.5, WBC – 6.9, Platelets – 422 Alk. Phosp -108 ALT - 42; AST – 39 CA 19-9 – 140 Alpha Fetoprotein – not available	Hepatitis B Positive Hb – 11.5; WBC - 6.5 Platelets – 267 Alk. Phosp. – 243 ALT – 92 AST – 147 CA 19-9 – 374 ↑ (< 40) GGT – 569 LDH – 301 Alpha Fetoprotein > 3,000 and repeat 1.045 million
Imaging:	Hepatic Angiogram and contrast CT Scan, large Tumour Right Lobe Segment IV, V, VI, VII, VIII Size 20 cm x 11cm x 9 cm	CT Scan – large Tumour 12cm x 10cm x 10 cm Mass Segment IVa+b, II and III
Surgery: **Laparotomy**	Inverted Y - shaped	Extended Chevron

Figure 5

	PATIENT 1 – K.B.	PATIENT 2 – S.D.
Duration	11½ hours	5 hours
Surgery:	Extended Right Hepatic Lobectomy Segment IV	Left Hepatic Lobectomy and Partial Right Hepatectomy Segment VIII, Right Lobe
Blood loss	8 litres	4 litres
Replacement	6 litres blood 2 litres F.F. P.	3 litres blood 1 litre F.F.P.
Mode of Haemostasis	Diathermy Ligaclips Fibrin Glue Pringle Manoeuvre	Diathermy Harmonic Scalpel Ligaclips Pringle Manoeuvre
Post-op	Sub Hepatic Drain Suction Right Thoracostomy Drain Ventilating support - 4 days ICU stay - 5 days Chest Tube Extubated - day 6 Chest Physiotherapy – post-op 7 days	Para Hepatic Sump Drain ICU stay - 2 days No Chest Tube Chest Physiotherapy post-op 5 days

Figure 6

	PATIENT 1 – K.B.	PATIENT 2 – S.D.
Histology	Well differentiated Hepatocellular Carcinoma with Pseudoglandular pattern Resection margins free	Hepatacellular Carcinoma Trabecular type, moderately differentiated. Marked chronic active Hepatitis Resected margins free
Duration of hospital stay	Fourteen (14) days	Nine (9) days
Post-op Blood Investigations:	Hb – 14.6 WBC – 10.6 ALB – 23 Glob. – 31 ALK Phosp. – 133 ALT - 72 AST - 139 Total Bili - 32.4 D - 13.5 IND - 18.9	Hb - 11.5 WBC - 6.5 ALB - 38 Glob - 40 ALK Phosp - 243 AST - 92 ALT - 147 GGT – 596 LDH - 796
Post-op Oncology	6 weeks Adriamycin 105 mg Dexamethasone 20 mg Zofran 8 mg Gravol 50 mg 5 courses 4 weekly cycles Disease free one year and three months post- surgery	8 weeks Nexavar 400 mg b.d. Eucern creams

Figure 7

	PATIENT 1 – K.B.	PATIENT 2 – S.D.
1 year and 3 months	Disease free LFT's normal	AST - 45 ALT - 44 GGT - 62 Alpha Fetoprotein < 5 ng/ml CA 19-9 - 96u/ml
1 year and 6 months	Disease Free LFT's normal	AST - 54 ALT - 59 GGT - 88 Alpha Fetoprotein – 5.3 ng/ml CA 19-9 - 73
1 Year and 9 months **2 Years** **5 years**	Alive but becoming increasingly unwell, early signs of Jaundice LFT's abnormal Patient demised	AST - 40 ALT - 44 GGT - 72 Alpha Fetoprotein < 5.0 ng/ml CA 19-9 - 57 CT Scan Brain No evidence of an intra-axial or extra-axial pathology, Sinonasal Inflammation CT Scan Chest & Abdomen The Left Hepatectomy with remnants, 4a – 8 stable, low attenuation segment 7 Liver Lesions unchanged. No new Liver Lesions were seen. Bilateral Basal Atelectatic Bands, otherwise normal AST - 50 ALT - 37 GGT - 45 Alpha Fetoprotein < 5 CA 19-9 - 44

Figure 8

Conclusion

These two (2) cases of Primary Hepatocellular Carcinoma illustrates the diversity of approaches to surgical treatment of this disease. It is further demonstrated that post-operative therapy is essential to the favorable outcome and prognosis of this disease. The five (5) year survival is possible once the disease is treated with urgency and appropriate targeted therapy commenced [1-19].

The sun will rise and the hopes and aspirations of these patients will be realized.

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