



Contents lists available at ScienceDirect

International Journal of Surgery Case Reports

journal homepage: www.casereports.com

Preoperative left hepatic lobe devascularisation to minimize perioperative bleeding in a Jehovah's Witness undergoing left hepatectomy

Laurence Weinberg^{a,b,*}, Georgina Hanus^a, Jonathan Banting^a, Diana Abu-ssaydeh^a, Manfred Spanger^c, Su Kah Goh^d, Vijayaragavan Muralidharan^d

^a Department of Anaesthesia, Austin Hospital, Heidelberg, 3084, Victoria, Australia

^b Department of Surgery, Austin Health, University of Melbourne, 8002, Victoria, Australia

^c Department of Radiology, Box Hill Hospital, Box Hill, Victoria, 3128, Australia

^d The University of Melbourne, Department of Surgery, Austin Health, Australia

ARTICLE INFO

Article history:

Received 16 January 2017

Received in revised form 20 April 2017

Accepted 1 May 2017

Available online 15 May 2017

Keywords:

Liver resection
Jehovah's Witness
Blood
Transfusion
Embolization

ABSTRACT

INTRODUCTION: Major liver resection in a Jehovah's Witness presents unique clinical challenges requiring multimodal blood minimization strategies to reduce perioperative complications. We report a case where complete left hepatic lobe devascularisation was undertaken to minimize bleeding in a Jehovah's Witness undergoing left hepatectomy.

PRESENTATION OF CASE: A 65-year-old male Jehovah's Witness presented for open left hepatectomy for a large left-sided hepatocellular carcinoma involving segment IV of the liver. Three weeks prior to surgery, the patient underwent left portal vein embolization. To isolate and devascularise the left lobe, the gastroduodenal artery and left hepatic artery were then occluded with coils. The bed of the left hepatic artery was then embolised to stasis with particles. Finally, the anastomosis back to the right hepatic artery was also occluded by coils. The patient underwent uneventful surgery with an estimated blood loss of 450 ml.

DISCUSSION: Left hepatectomy in a Jehovah's Witness patient is feasible but requires careful planning and a multidisciplinary approach. Major liver resection represents a well defined but complex haemostatic challenge from tissue and vascular injury, further complicated by hepatic dysfunction, and activation of inflammatory, haemostatic and fibrinolytic pathways. In addition to the haemoglobin optimization strategies utilized preoperatively, the use of interventional radiology techniques to further reduce perioperative bleeding should be considered in all complex cases.

CONCLUSION: Combination of portal vein embolization and hepatic lobe devascularisation to produce total vascular occlusion of inflow to the left lobe radiologically allowed a near bloodless surgical field during major liver resection in a Jehovah's Witness patient.

© 2017 The Author(s). Published by Elsevier Ltd on behalf of IJS Publishing Group Ltd. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

1. Introduction

Major liver resection in a Jehovah's Witness presents unique clinical challenges requiring multimodal blood minimization strategies to reduce perioperative complications and improve outcomes. Even in expert surgical units, unexpected blood loss during left hepatectomy, coupled with aggressive fluid resuscitation and

dilutional coagulopathy may represent a final common pathway toward life-threatening haemorrhage. We overview our multidisciplinary management focusing specifically on our preoperative radiological interventions employed to minimize perioperative bleeding. This case is reported in line with the SCARE criteria [1] and compliant with the PROCESS guidelines [2].

2. Presentation of case

A 65-year-old male presented for open left hepatectomy for a left-sided hepatocellular carcinoma in a University teaching hospital. Computed tomography and magnetic resonance imaging (MRI) demonstrated a large tumour involving the entire segment IV, positioned between the middle and the left hepatic veins. A T1-weighted axial MRI at the level of right hepatic vein demonstrated

* Corresponding author at: Department of Anaesthesia, Austin Hospital, Heidelberg, Victoria, 3084, Australia.

E-mail addresses: laurence.weinberg@austin.org.au (L. Weinberg), georgie.hanus@gmail.com (G. Hanus), jkbanting@gmail.com (J. Banting), diana.abussaydeh@gmail.com (D. Abu-ssaydeh), spanger@bigpond.net.au (M. Spanger), sukah84@hotmail.com (S.K. Goh), muv@unimelb.edu.au (V. Muralidharan).

Table 1
Perioperative laboratory values.

	Reference ranges	Pre-operative	Postop	Day 1	Day 2	Day 3	Day 4	Day 5 Discharge
Prothrombin Time (sec)	11–15	12	16	14	12		12	11.0
Activated Partial Thromboplastin Time (sec)	22–38	28	33	30	28		27	28.8
Fibrinogen clauss (g/L)	2.0–4.0	4.3	6.1	4.3	5.9		2.9	2.8
International Normalized Ratio	<1.5	1.0	1.6	1.5	1.4		1.2	1.0
Haemoglobin (g/L)	130–180	120	124	116	107	111	116	122
White blood cell (x10 ⁹)	4.0–11.0	10.0	11.3	10.7	12.7	8.2	7.7	7.7
Platelets (x10 ⁹)	150–400	209	176	178	162	186	191	213
Lactate (mmol/L)	11–15	1.6	2.6	1.9	1.6		1.6	1.7
Urea (mmol/L)	3.2–7.3	4.5	5.8	5.7		3.2		2.9
Creatinine (umol/L)	62–106	76	91	71		69		76
Albumin (g/L)	35–52	37	29	25		25		27
Globulins (g/L)	25–35	32	28	25		26		27
Bilirubin (umol/L)	<18	16	14	12		7		12
Alkaline phosphatase (IU)	40–130	84	70	64		68		80
Alanine transaminase (IU)	<51	313	764	681		489		371
Aspartate aminotransferase (IU)	<41	312	633	431		212		122
Gamma-glutamyl tranferase (U/L)	<51	90	102	89		91		114

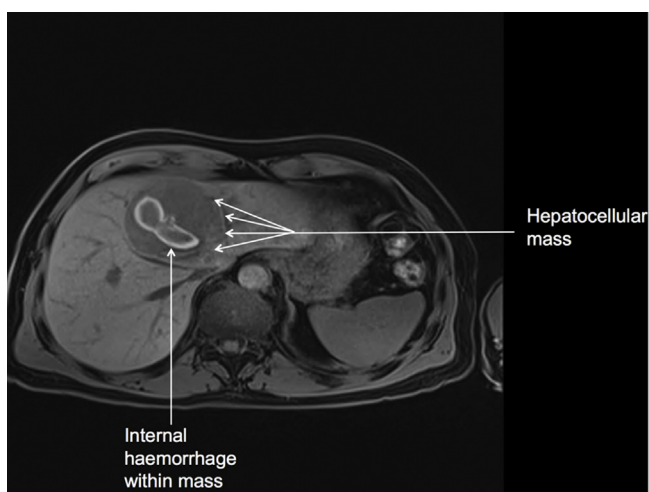


Fig. 1. T1 weighted axial MRI at the level of right hepatic vein demonstrating mass with internal haemorrhage.

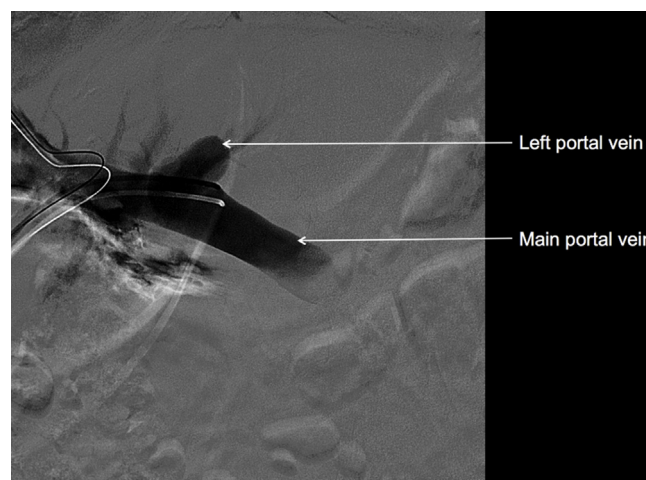


Fig. 2. Venogram showing major branches of portal vein prior to left portal vein embolization.

internal haemorrhage within the mass (Fig. 1). Liver volumetry showed the whole liver size to be 1730 mL with the volume of the right lobe (future liver remnant) being 1160 mL. Hepatobiliary iminodiacetic acid scanning volumetry estimated the future liver remnant to be 6.7%/min/m². Preoperative haematology, renal function and coagulation profiles are summarised in Table 1. The patient refused any form of blood or blood products.

Preoperative haemoglobin optimization performed 4 weeks prior to surgery included IV iron therapy, and oral folate, vitamin B and ascorbic acid. Synthetic EPO was not considered as the preoperative haemoglobin was 120 g/dL and renal function was normal. Three weeks prior to surgery, the patient underwent left portal vein embolisation. The portal vein was accessed via the right liver, as there was distortion on the left due to the large tumour (Fig. 2). The portal system was mapped and branches supplying the left inclusive of segment 4 were identified and particle embolised to near stasis (Boston Scientific Contour 355–500 um, Boston Scientific, Marlborough, Massachusetts, USA). A metal coil (Boston Scientific Interlock-35, Boston Scientific, Marlborough, Massachusetts, USA) was placed in the left portal vein 15 mm from the portal confluence to allow a suitable clamp and tie off position at the time of surgery. The right-sided access was removed and the track into the liver was embolised with Gelfoam pledgets (Pfizer, Kalamazoo, Michigan, USA).

One day prior to left hepatectomy exploration of the hepatic arterial anatomy was undertaken. It was known that the patient had a replaced right hepatic artery originating off the superior mesenteric artery (common variant), however a functional celiac artery stenosis was diagnosed causing retrograde blood supply of the left lobe via the gastroduodenal artery and via large anastomosis with the right hepatic artery (Fig. 3). To isolate and devascularise the left lobe, a retrograde approach via the right hepatic artery or gastroduodenal artery (GDA) was planned. The GDA could not be cannulated owing to its torturous pathway off superior mesenteric artery branches. The right hepatic artery was cannulated and a microcatheter placed through the anastomosis with the left hepatic artery and manipulated back to the bifurcation of the GDA and common hepatic artery. The GDA and left hepatic artery were occluded with coils (Boston Scientific Interlock-18, Boston Scientific, Marlborough, Massachusetts, USA) (Fig. 4). The bed of the left hepatic artery was embolised to stasis with particles (Boston Scientific Contour 355–500 um, Boston Scientific, Marlborough, Massachusetts, USA). The anastomosis back to the right hepatic artery was then occluded by coils (Boston Scientific Interlock-18, Boston Scientific, Massachusetts, USA) (Fig. 5). The procedure was completed with a closure device to the right groin (Exoseal, Cordis, Warren, NJ, USA).

The following day the patient proceeded to left hepatectomy. A curved bilateral subcostal incision was made to approach the liver with maximal exposure provided by a Thompson retractor system (Thompson Surgical Instruments, MI). Intraoperative ultra-

Download English Version:

<https://daneshyari.com/en/article/8833183>

Download Persian Version:

<https://daneshyari.com/article/8833183>

[Daneshyari.com](https://daneshyari.com)