Role of different imaging modalities in diagnosis of vascular complications in the recipient of living donor liver transplantation

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Hazem mohamed


To My
Family

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List of Abbreviations

CT	Computed tomography
CTA	Computed tomography angiography
DSA	Digital subtraction angiography
HA	Hepaic artery
HAS	Hepaic artery stenosis
HAT	Hepaic artery thrombosis
IVC	Inferior vena cava
LDLT	Living donor liver transplantation
LHV	Left hepatic vein
MDCTA	Multidetector CT angiography
MHV	Middle hepatic vein
MIP	Maximium intensty projection
MRA	Magnetic resonace angiography
MRI	Magnetic resonace
PV	Portal vein
RHV	RT hepatic vein
RL	RT lobe

RLT	Reduced size liver transplantation
SLT	Split liver transplantation
SMA	Superior mesnteric vein
SMV	Superior mesnteric artery
SPA	Splenic vein
SPV	Splenic artery
T1 WI	T_1 weighted image
T2 WI	T_2-weighted image
US	Ultrasonography
VCS	Vascular closure stablets

INTRODUCTION

Liver transplantation has had a profound impact on the care of patients with end-stage liver disease and is the most effective treatment for many ***patients*** with acute or chronic liver failure resulting from a variety of causes. Before transplantation, patients with advanced liver disease usually died within months to years. These patients now have the opportunity for extended survival with excellent quality of life after liver transplantation. Furthermore, the costs of liver transplants have steadily declined in recent years (***Murray and Carithers., 2005***)

Since first performed in 1963 by Dr. Thomas Starzl, liver transplantation has achieved a high success (***Uzochukwu et al., 2005***)

Improvements in organ preservation, surgical technique, immunosuppressive regimens, intensive care, and anesthetic management during the last decade have achieved better short-term and long-term outcomes (***Ferraz-Neto et aL.,2007)***

Most liver transplants are performed using a whole liver from a deceased donor. During transplantation, the donor liver is placed in the orthotopic position, hence the term orthotopic liver transplantation (***Keeffe., 2001***)

Living donor liver transplantation (LDLT) was first developed in Asia due to the severe lack of cadaveric graft in this region. The Liver Transplant Service at Queen Mary Hospital (QMH), Hong Kong, has

pioneered the application of LDLT to patients using both left lobe and right lobe grafts (***Leong., 2006***)

The procedure of liver transplantation involves anastomoses of the hepatic artery, portal vein, hepatic veins and bile duct between the recipient and donor organs. These may be damaged through technical complications, resulting in stricture or kinking of the anastomoses, and there may also be thrombosis leading to vascular occlusion (***Haugka, et al., 2007***)

Vascular complications are the major cause of morbidity and mortality after liver Transplantation (***Moray, et al., 2005***). Early and accurate diagnosis of vascular complications is crucial for increasing the survival rate of the graft in living related liver transplantation because most stenoses or thromboses are treatable with interventional procedures. If untreated, many vascular complications may progress to severe hepatic failure or overwhelming biliary sepsis resulting in graft failure (**kim,et al.,2003)**

Imaging plays an important role in the diagnosis of these compilication . A multimodality approach including ultrasonography and cross-sectional imaging studies often is most effective for diagnosis. Each imaging modality has specific strengths and weaknesses (***Caiado et al.,2007***)