



شبكة المعلومات الجامعية  
التوثيق الإلكتروني والميكرو فيلم

# بسم الله الرحمن الرحيم



**HANAA ALY**



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# شبكة المعلومات الجامعية التوثيق الإلكتروني والميكروفيلم



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# جامعة عين شمس

## التوثيق الإلكتروني والميكروفيلم

### قسم

نقسم بالله العظيم أن المادة التي تم توثيقها وتسجيلها  
علي هذه الأقراص المدمجة قد أعدت دون أية تغييرات



### يجب أن

تحفظ هذه الأقراص المدمجة بعيدا عن الغبار



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# **Assessment of safety and applicability of laparoscopic vs open non anatomical resection of hepatocellular carcinoma in cirrhotic patients**

*Thesis*

*For fulfillment of Master degree in General Surgery*

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2020**

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

قَالَ

سُبْحَانَكَ لَا عِلْمَ لَنَا  
إِلَّا مَا عَلَّمْتَنَا إِنَّكَ أَنْتَ  
الْعَلِيمُ الْعَظِيمُ

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## List of Abbreviations

<i>Abbr.</i>	<i>Full term</i>
%	Percent
3rd	Third
ABG	Arterial blood gases
AE	Anesthetist
AFP	Alfa fetoprotein
ASA	American society of anesthesiologists
ATN	Acute tubular necrosis
BIP	Bipolar electrocautery
BWS	Beckwith-Wiedmann syndrome
CA	California
CA19-9	Carbohydrated antigen
CBC	Complete blood count
CBD	Common bile duct
CCA	Cholangiocarcinoma
CEA	Carcenoembryonic antigen
CHA	Common hepatic artery
Cm	Centimeter
CO <sub>2</sub>	Carbon dioxide
CT	Computed tomography
CUSA	Cavitron ultrasonic surgical aspirator
CVA	Cardiovascular arrhythmia
CVP	Central venous pressure
DM	Diabetes mellitus
DVT	Deep venous thrombosis
ECG	Electrocardiomyography
ELS	Endolinear stapler
FAP	Familial adenomatous polyposis
FDG	Fluoro-deoxyglucose
FIG	Figure



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*List of Abbreviations*

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<b>FLR</b>	Future liver remnant(residual)
<b>FNC</b>	Focal nodular carcinoma
<b>FNH</b>	Focal nodular hyperplasia
<b>GIA Stapler</b>	Gastrointestinal anastomosis Stapler
<b>GIT</b>	Gastrointestinal tract
<b>GLDH</b>	Glutamate dehydrogenase
<b>HALS</b>	Hand assisted laparoscopic surgery
<b>HB</b>	Hemoglobin
<b>HBs Ag</b>	Hepatitis B antigen
<b>HBV</b>	Hepatitis B virus
<b>HCA</b>	Hepatocellular adenoma
<b>HCC</b>	Hepatocellular carcinoma
<b>HCV</b>	Hepatitis C virus
<b>HIV</b>	Human immunodeficiency virus
<b>HS</b>	Highly significant
<b>HVE</b>	Hepatic vascular exclusion
<b>Hz</b>	Hertz
<b>ICG</b>	Indocyanine green
<b>ICU</b>	Intensive care unit
<b>IgG</b>	Imunoglobulin G
<b>IHPBA</b>	International hepato-pancreatico-biliary association
<b>IOUS</b>	Intraoperative ultrasound
<b>IV</b>	Intravenous
<b>IVC</b>	Inferior vena cava
<b>K</b>	Potassium
<b>Kg</b>	Kilogram
<b>Lap</b>	Laparoscopic
<b>LCS</b>	Laparoscopic coagulating shear
<b>LG</b>	Laparoscopic group
<b>LGA</b>	Left gastric artery
<b>LH</b>	Left hepatic
<b>LHA</b>	Left hepatic artery

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*List of Abbreviations*

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<b>LHV</b>	Left hepatic vein
<b>LLR</b>	Laparoscopic liver resection
<b>LLS</b>	Laparoscopic liver surgery
<b>LPV</b>	Left portal vein
<b>Lt or L</b>	Left
<b>MDCT</b>	Multidetector computed tomography
<b>MHV</b>	Main hepatic vein
<b>MI</b>	Myocardial infarction
<b>min</b>	Minute
<b>mL</b>	Meliletre
<b>mm</b>	Melimeter
<b>mmHg</b>	Melimeter mercury
<b>MPV</b>	Mean portal vein
<b>MRA</b>	Magnetic resonance angiography
<b>MRI</b>	Magnetic resonance imaging
<b>MTC</b>	Microwave tissue coagulator
<b>NA<sup>+</sup></b>	Sodium
<b>NASH</b>	Non alcoholic steatohepatosis
<b>No</b>	Number
<b>NS</b>	Non significant
<b>OCT</b>	October
<b>OG</b>	Open group
<b>OLR</b>	Open liver resection
<b>OS</b>	Operating surgeon
<b>PE</b>	Pulmonary embolism
<b>PET</b>	Positron emission tomography
<b>PSC</b>	Primary sclerosing cholangitis
<b>PT</b>	Prothrombin time
<b>PV</b>	Portal vein
<b>PVE</b>	Portal vein embolization
<b>ra</b>	right anterior
<b>RAPV</b>	Right anterior portal vein
<b>RF</b>	Radiofrequency

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*List of Abbreviations*

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<b>RFA</b>	Radiofrequence assay
<b>RHA</b>	Right hepatic artery
<b>RHV</b>	Right hepatic vein
<b>rp</b>	right posterior
<b>RPPV</b>	Right posterior portal vein
<b>RPV</b>	Right portal vein
<b>Rt</b>	Right
<b>S</b>	Significant
<b>SD</b>	Standard deviation
<b>Sg</b>	Segment
<b>SH</b>	Saline hook
<b>SHVE</b>	Selective hepatic vascular exclusion
<b>SMA</b>	Superior mesentric artery
<b>SPSS</b>	Statistical package of the social science software
<b>ST</b>	Surgical technician
<b>TACE</b>	Trasarterial chemoembolization
<b>TEG</b>	Thromboelastography
<b>THVE</b>	Total hepatic vascular exclusion
<b>TL-MS</b>	Tissuelink-monopolar sealer
<b>TNF <math>\alpha</math></b>	Tumor necrosis factor alfa
<b>t-test</b>	Student test
<b>U</b>	Mann-whitney test
<b>US</b>	Ultrasound
<b>USA</b>	United State of America
<b>VS</b>	Versus
<b><math>\bar{X}</math></b>	Mean
<b>y</b>	Year
<b><math>\gamma</math>GT</b>	Gamma glutemylal trasaminase
<b><math>\chi^2</math></b>	Chi-squared test
<b>EBV</b>	Ebstine bar virue

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# INTRODUCTION

Throughout history, the liver has been viewed as a mysterious organ, clearly central to human survival. Its complex anatomy, many functions, and rich vascularity have accorded it proper respect from surgeons throughout the world but after improved understanding of segmental liver anatomy together with radiological technique and critical care improvements have allowed liver resection to become an established part of surgical practice over the past 30 years (*Mirnezani et al., 2011*).

There is a wide variety of both benign and malignant tumors that develop in the liver. The Most common benign entities are hemangioma, followed by focal nodular hyperplasia (FNH) and adenoma, which together represent more than 80% of all benign liver tumors. Rare benign liver diseases include for instance parasitic liver cysts, cystadenoma, caroli's disease and angiomyolipoma. Although data are heterogeneous incidence of simple liver cysts is estimated to be approximately 5%. Asymptomatic benign tumors rarely require any form of surgical management, they may require intervention if they begin to enlarge over time or become symptomatic. Potential treatments include