

Incidence of portal vein thrombosis in patients presenting with the first attack of hematemesis

THESIS

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Abstract

Background: Portal vein thrombosis (PVT) can be a difficult clinical problem to assess and manage. A high index of suspicion is needed for a PVT diagnosis given the subtle presentation and potentially serious long-term complications.

Subjects and methods: We studied 30 patients who presented with the first attack of hematemesis and /or melena, at the Tropical and Hepatology Institute ministry of health. The population of the study were subjected to thorough history taking, proper clinical examination and to laboratory, endoscopic and ultrasound examination [grey and color-coded]. It included subjects from both sexes and age group ranging from 40 to 70 years.

Results: The study showed that the incidence of portal vein thrombosis in the patients presenting with first attack of hematemesis is 20% with highly significant correlation between portal vein thrombosis and the presence of hepatic focal lesions and elevation of the serum AFP in those patients.

Conclusion: Our study results indicated that portal vein thrombosis is not uncommon in cirrhotic patients presenting with the first attack of variceal bleeding and this emphasizes the importance of using ultrasonography with color-coded Doppler with all patients to assess for this complication. Also, our study showed that the presence of portal vein thrombosis should attract the attention of the sonographer to look carefully for focal hepatic lesions as HCC commonly invade the portal vein or its branches.

Key words: Portal vein thrombosis, hepatocellular carcinoma, variceal bleeding.

Table of Contents

	Page
LIST OF ABBREVIATIONS	<i>I</i>
LIST OF TABLES	<i>III</i>
LIST OF FIGURES	<i>V</i>
INTRODUCTION	1
AIM OF THE WORK	2
REVIEW OF LITERATURE:	3
CHAPTER I:	3
• Anatomy of portal vein	
CHAPTER II	11
▪ Portal hypertension	
CHAPTER III	32
▪ Doppler ultrasonography in portal hypertension	

CHAPTER IV	43
▪ Oesophageal variceal bleeding	
CHAPTER V	56
▪ Portal vein thrombosis	
PATIENTS AND METHODS	70
RESULTS	75
DISCUSSION	92
SUMMARY	100
CONCLUSION AND RECOMMENDATIONS	101
REFERENCES	102
ARABIC SUMMARY	

List of Abbreviation

(AFP)	Alfa Feto Protein
(CSPH)	Clinically Significant Portal Hypertension
(CT)	Computed Tomography
(CI)	Congestion Index
(EHPVO)	Extra Hepatic Portal Vein Obstruction
(EUS)	Endoscopic Ultrasound
(FHVP)	Free Hepatic Venous Pressure
(GI)	Gastrointestinal
(GOV)	Gastro-Oesophageal Varices
(HVPG)	Hepatic Venous Pressure Gradient
(HCC)	Hepatocellular Carcinoma
(IVC)	Inferior Vena Cava
(MRA)	Magnetic Resonance Angiography
(MRI)	Magnetic Resonance Imaging
(MELD)	Model Of End Stage Liver Disease
(NO)	Nitric Oxide
(PHG)	Portal Hypertensive Gastropathy
(PHT)	Portal Hypertension
(PPG)	Portal Pressure Gradient
(PVF)	Portal Venous Flow
(PVT)	Portal Vein Thrombosis

(TIPS) Transjugular Intrahepatic Portosystemic Shunt

(US) Ultrasound

(WHVP) Wedge Hepatic Venous Pressure

List of Tables

Table (1)	Classification and etiology of portal hypertension	14
Table (2)	Modified Child– Pugh's Classification	21
Table (3)	Causes of acute upper gastrointestinal bleeding	44
Table (4)	Grades of esophageal varices.....	50
Table (5)	Grading of esophageal varices.....	51
Table (6)	Grading of esophageal varices by.....	51
Table (7)	Prevalence of etiological factors.....	60
Table (8)	Local factors favoring or precipitating development of portal vein thrombosis	62
Table (9)	Distribution of the studied cases as regard demographic data	74
Table (10)	Summary of laboratory data	75
Table (11)	Distribution of the studied cases as regard ascites	76
Table (12)	Distribution of the studied cases as regard consciousness	77
Table (13)	Distribution of the studied cases as regard Child classification	78

Table (14)	Distribution of the studied cases as regard PVT	79
Table (15)	Distribution of the studied cases as regard focal lesion	80
Table (16)	Comparison between both groups results as regard age distribution	81
Table (17)	Comparison between both groups as regard gender	81
Table (18)	Summary of laboratory data among cases without PVT	82
Table (19)	Summary of laboratory data among cases with PVT	82
Table (20)	Comparison between both groups as regard different laboratory data	83
Table (21)	Comparison between both groups as regard Child score	84
Table (22)	Comparison between both groups as regard consciousness	85
Table (23)	Comparison between both groups as regard ascites	86
Table (24)	Comparison between both groups as regard focal lesion	87

List of Figures

	Page
Figure (1): Porto-systemic shunts	10
Figure (2): Patent portal vein	42
Figure (3): Hepatocirrhosis with portal vein thrombosis	64
Figure (4): Thrombosed main portal trunk &HCC	64
Figure (5): Portal vein thrombosis and HCC	65
Figure (6): portal vein thrombosis	65
Figure(7): Distribution of the studied cases as regard ascites	76
Figure(8): Distribution of the studied cases as regard consciousness	77
Figure(9): Distribution of the studied cases as regard Child classification	78
Figure(10): Distribution of the studied cases as regard PVT	79
Figure(11): Distribution of the studied cases as regard focal lesion	80
Figure(12): Comparison between both groups as regard gender	81
Figure(13): Comparison between both groups as regard Child score	84

Figure(14): Comparison between both groups as regard consciousness	85
Figure(15): Comparison between both groups as regard ascites	86
Figure(16): Comparison between both groups as regard focal lesion	87
Figure(17): Thrombosed main portal trunk	88
Figure(18): Thrombosed main portal trunk	88
Figure(19): Partially thrombosed main trunk and left branch	89
Figure(20): Rt. portal thrombosis Lt. portal thrombosis	89
Figure(21): Malignant invasion of the portal vein	90
Figure(22): Rt. branch thrombosis Lt. branch thrombosis	90

Introduction

Finding of portal vein thrombosis is essentially important in establishing the diagnosis of portal hypertension. However, it may explain worsening of the clinical condition of a cirrhotic patient and affect the outcome of the liver transplantation (*Bolondi et al., 1994*).

Over the last years, portal vein thrombosis (PVT) is increasingly being diagnosed by the wide use of color-Doppler ultrasound equipment. Recently, the lifetime risk of getting PVT in general population is reported to be 1% (*Connolly et al., 2008*).

A thrombosed portal vein was present in 3.4% of portal hypertensive patients according to (*Ditchfield et al., 1992*).

Portal vein thrombosis is a commonly encountered problem in liver cirrhosis specially if complicated by hepatocellular carcinoma (HCC). Previous studies have shown that 50%-90% of HCC patients are complicated by portal vein thrombosis (*Lin et al., 2001*).

Portal vein thrombosis is a major metastatic route of hepatocellular carcinoma (*Long Yang et al., 2005*).

Aim of the work

The aim of the study was to estimate the incidence of portal vein thrombosis in patients presenting with the first attack of variceal bleeding by using ultrasonography and color-coded Doppler technique as well as its relationship to the presence of hepatocellular carcinoma.

Chapter I

Anatomy of portal circulation

The liver has dual blood supply from the hepatic artery proper and the portal vein. The hepatic artery proper is a branch of the celiac axis while the portal vein carries venous blood from alimentary canal to the liver sinusoids (*Reynolds, 1982*).

The liver drains blood into the inferior vena cava (IVC) via the hepatic veins thus the vessels connected to the liver are hepatic vein, hepatic artery and portal veins (*Warwick and Williams, 1989*). Since the portal vein drains blood of an area supplied by branches of the celiac axis other than the hepatic artery, and by the superior and inferior mesenteric arteries, then it is obvious that the amount of blood flowing into the liver depends on the flow in these arteries (*Rappaport, 1982*).

Vascular anatomy of the portal vein:

The portal vein is formed by the union of the superior mesenteric vein and the splenic vein just posterior to the head of the pancreas at about the level of the second lumbar vertebra. It extends slightly to the right of the midline for a distance of 5.5-8 cm to the porta hepatis (*Reynolds, 1982*).