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

THESIS

Submitted for fullfillment
Of the M.Sc. degree
In Internal Medicine

Submitted by
Amir Mostafa Khater
(M.B.B.Ch.)

Under supervision of

Prof. Dr. Reda Mohammed Amer
Professor of Internal Medicine
Faculty of medicine,
Cairo University

Prof. Dr. Elsayed Abdalla Elsayed
Assistant Professor of Internal Medicine
Faculty of medicine,
Cairo University

Faculty of Medicine
Cairo University
2009

جامعه القاهره / كليه الطب
الدراسات العليا

محضر

اجتماع لجنة الحكم على الرسالة المقدمة من
الطبيب / أمير مصطفى محمد جابر
توطئة للحصول على درجة الماجستير / الدكتوراه
فى اسم اللغة العامة لماجستير

تحت عنوان : باللغة الإنجليزية : Incidence of portal vein thrombosis in patients presenting with First attack of Hematemesis

باللغة العربية : احتمالية وجود جلطة بالوريد الباب في مرضى النزف الدموي لأول مرة

بناء على موافقة الجامعة بتاريخ / / ٢٠٠ تم تشكيل لجنة الفحص والمناقشة للرسالة المذكورة أعلاه على النحو التالى :-

١. أ.د/ رضا محمد عامر ..... عن المشرفين
٢. أ.د/ هانى عليوة ..... ممتحن داخلى
٣. أ.د/ محسن سلامة محمد ..... ممتحن خارجى

بعد فحص الرسالة بواسطة كل عضو منفردا وكتابة تقارير منفردة لكل منهم انعقدت اللجنة مجتمعة فى يوم السبت بتاريخ ٢٠٠٩/١/٩ بقسم مدرج بكلية الطب – جامعة القاهرة وذلك لمناقشة الطالب فى جلسة علنية فى موضوع الرسالة والنتائج التى توصل اليها وكذلك الأسس العلمية التى قام عليها البحث .

قرار اللجنة : قررت اللجنة قبول الرسالة

توقيعات أعضاء اللجنة :-

المشرف الممتحن

المستحن الداخلى

المستحن الخارجى

عصام :

Acknowledgement

First of all thanks to "ALLAH" the most gracious and the most merciful for helping me to complete this study.

I am greatly honored to express my deepest gratitude and special thanks to Prof. Dr. ***Reda Mohammed Amer****, Professor of Internal Medicine, Faculty of Medicine, Cairo University. He is always correcting and guiding me all the way. His scientific and moral support made it possible for this work to see the light. Indeed I am honored to be given the chance to gain knowledge at the hands of such supportive supervisor.*

I would like to express my greatest and deepest appreciation to Prof. Dr. ***Elsayed Abdalla Elsayed****, Assistant Professor of Interanl Medicine, Faculty of Medicine, Cairo University, for his valuable effort and endless help in this work. I am in great debt to him .*

I also wish to thank all staff members and colleagues in the Internal medicine Department, Tropical and Hepatology Institute, for their constant encouragement and cooperation during my work.

Ultimately, I owe profound gratitude to my beloved family, for their understanding, warm heart, true love and all supports; they blessed me with, throughout my life, God bless them.

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

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

List of Figures

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)***.