DOI: https://doi.org/10.53350/pjmhs22168912

ORIGINAL ARTICLE

Portal Thrombosis: Clinical, Etiological and Therapeutic Aspects in the Hepato-Gastroenterology

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ABSTRACT

Objective: Our study aimed to assess the frequency of PT, outline its clinical and etiological manifestations, and detail its therapeutic therapy in the field of hepato-gastroenterology.

Study Design: Retrospective study

Place and Duration: In the department of Medicine and Gastroenterology of Ayub Teaching Hospital Abbottabad and HBS Dental and General Hospital, Islamabad for the duration of six months from June 2021 to November 2021.

Methods: There were 94 patients of both genders had symptomatic gastro abnormalities included in this study. After getting informed written consent detailed demographics of enrolled cases were recorded. Patients were underwent for CT scan and ultrasound for image examination. Prevalence, etiology, therapeutic and clinical aspects of PT were assessed. SPSS 22.0 was used to analyze all data.

Results: The mean age of the patients was 40.3±8.60 years and had mean BMI 24.4±6.30 kg/m^2. There were majority males 53 (56.4%) and 41 (43.6%) females. Majority were from urban areas. Most common symptoms were abdominal pain, ascites and gastrointestinal bleeding. Prevalence of PT was found in 3 (3.2%) cases. Majority patients 65 (69.1%) were diagnosed with ultrasound and 29 (30.9%) patients received CT scan of abdomen. Frequency of complete thrombosis was found in 63 (67.02%) cases. Most common etiology was cirrhosis followed by hepatocellular carcinoma.

Conclusion: According to the findings of our study, the prevalence of PT in hepato-gastroenterology is 3.2%. Cirrhosis exacerbated by HCC is the principal cause of the chronic form, which has a very high prevalence rate.

Keywords: Cirrhosis, Hepatocellular Carcinoma, Portal Thrombosis

INTRODUCTION

Myeloproliferative disease, cirrhosis, cancer, and infection are only few of the clinical scenarios in which portal vein thrombosis (PVT), the occlusion of the portal vein or its branch by a blood clot, occurs. The identification of symptomatic PVT during regular ultrasonographic screening has led to an increase in the number of PVT diagnoses in patients with cirrhosis. The clinical manifestations of PVT range from asymptomatic to fatal, including gastroesophageal bleeding and severe intestinal ischemia[1-3]. While liver transplantation has improved outcomes for those with cirrhosis, having PVT can prevent you from being placed on a transplant waiting list or reduce your chances of surviving after surgery[4].

PVT's role in the progression of liver disease is not well understood; it may be a secondary effect of the illness or an independent exacerbating factor. Although PVT is widely recognised as a common consequence of liver cirrhosis, there is a dearth of information regarding its natural course and care, in contrast to PVT in patients without cirrhosis, which is despite its link with potentially fatal diseases. As an added complication, there is still no general agreement on how to treat PVT in cirrhosis. The demand for effective, evidence-based treatment of PVT in cirrhosis continues to rise. [5]

Portal vein thrombosis can present with unusual symptoms, such as abdominal discomfort, as will be shown in the accompanying case report. Recent studies seem to demonstrate the usefulness of thrombolysis in acute instances as well as the benefit of anticoagulation in patients with chronic portal venous stasis [6]. Despite the paucity of large randomised trials, a consensus on optimum therapy is being sought.

There is a wide variety of potential causes for PT, but in around 80% of instances, doctors can pinpoint the problem to either a specific area or a more systemic issue. Cirrhosis, hepatocellular carcinoma, regional causes (infection, surgery), and a prothrombotic state are the most common causes of this condition. Physical therapy (PT) may be either short- or long-term. Whether the thrombosis is acute or chronic, how extensive it is, and what causes it all contribute to the wide range of clinical presentations and outcomes seen with PT (s). Imaging is used to confirm the diagnosis, clarify the thrombosis's extent, and look for local causes. Treatment in the acute phase should focus on making the thrombosed arteries more permeable so that the condition doesn't progress to the chronic stage. Anticoagulant therapy at the portal cavernoma stage aims to stop the thrombosis from spreading to the intestine's venous arches and stopping further progression of the disease. [7,8]

MATERIAL AND METHODS

This retrospective study was conducted at the department of Medicine and Gastroenterology of Ayub Teaching Hospital Abbottabad and HBS Dental and General Hospital, Islamabad for the duration of six months from June 2021 to November 2021 and comprised of 94 patients. After getting informed written consent detailed demographics of enrolled cases were recorded. Patients <18 years of age, had severe medical illness and those did not provide any written consent were excluded.

Patients' ages ranged from 18 to 75 years in this study. We included all patients who showed a PT that could be objectively determined by an imaging test (either an abdominal ultrasound or an abdominal CT scan). We gathered information on PT's age, gender, clinical and radiological characteristics, recommended therapies, and aetiology. The software programmes SPHINX (evaluation version) V5 and SPSS 20.0 were utilised for data input and analysis respectively. The figures were designed with SPSS 22.0; the PEARSON chi-square test, the FISHER test, and the STUDENT test were used to compare proportions; and the STUDENT test was used to compare means. The level of significance was set at 0.05 (p less than 0.05).

RESULTS

The mean age of the patients was 40.3±8.60 years and had mean BMI 24.4±6.30 kg/m^2. There were majority males 53 (56.4%) and 41 (43.6%) females. Majority were from urban areas.(table 1)

Table-1: Information of included cases

Variables	Frequency	%age
Mean age (years)	40.3±8.60	
Mean BMI (kg/m^2)	24.4±6.30	
Gender		
Male	53	56.4
Female	41	43.6
Residence		
Rural	49	52.1
Urban	45	47.9

Most common symptoms were abdominal pain, ascites, gastrointestinal bleeding, hepatomegaly and jaundice among all cases.(figure 1)

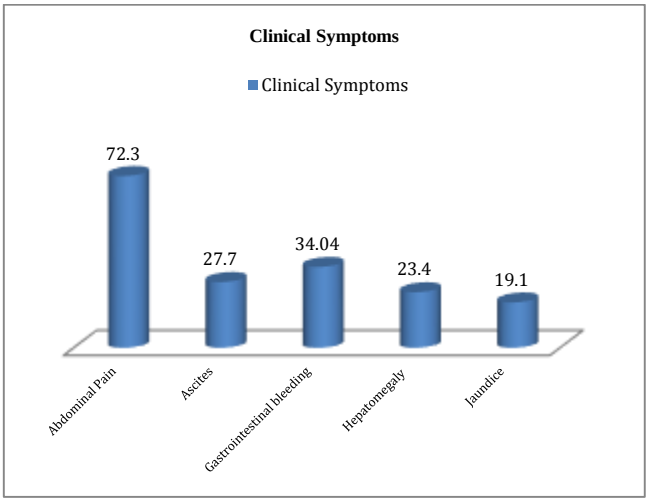

Figure-1: Presentation of symptoms among all cases

Prevalence of PT was found in 3 (3.2%) cases. Majority patients 65 (69.1%) were diagnosed with ultrasound and 29 (30.9%) patients received CT scan of abdomen.(table 2)

Table-2: Prevalence of PT and frequency of ultrasound and CT scan

Variables	Frequency	%age
Prevalence of PT		
Yes	3	3.2
No	91	96.8
Diagnosis		
CT scan	29	30.9
Ultrasound	65	69.1

Frequency of acute PT found in 9 (9.6%) cases and chronic PT in 85 (90.4%) patients.(figure 1)

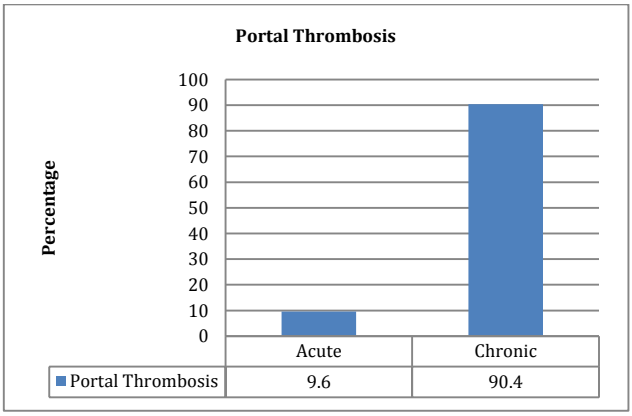

Figure-1: Association of chronic PT

Frequency of complete thrombosis was found in 63 (67.02%) cases followed by portal cavernoma, splenic varices, superior mesenteric vein extension, splenic vein thrombosis, extension to the inferior vena cava and extension to the spleno-mesenteric trunk.(table 3)

Table-3: Frequency of abnormalities among all cases

Variables	Frequency	%age
Abnormalities		
extension to the spleno-mesenteric trunk	1	1.1
extension to the inferior vena cava	2	2.1
splenic vein thrombosis	3	3.2
superior mesenteric vein extension	4	4.3
splenic varices	7	7.4
portal cavernoma	14	14.9
complete thrombosis	63	67.02

Most common etiology was cirrhosis followed by hepatocellular carcinoma.(table 4)

Table-4: Association of etiology

Variables	Frequency	%age
Cirrhosis		
Yes	60	63.8
No	34	36.2
Hepatocellular carcinoma		
Yes	54	57.4
No	40	42.6

DISCUSSION

PT is a rare condition. Its incidence and prevalence are estimated at 0.7 to 3.7 per 100,000 population, respectively.[9,10] Clinically, PT is considered acute if symptoms appear within 60 days before medical management [11]. In the past, the disease was frequently discovered in the chronic stage. Currently, due to easier access to imaging techniques, diagnosis at the acute stage in adults is more frequent. However, in our study, only 5 patients were found to have PT at the acute stage. This delay in diagnosis could be explained by the often asymptomatic nature of PT and the poor availability of imaging studies in our countries. In our series, clinical manifestations were dominated by abdominal pain which was present in 73.3% of patients. Abdominal pain was present in 77.7% of cases in the study by Abouothman and in 40% in the study by Benhaddou [12]. In the portal cavernoma stage, the revealing signs may be thrombocytopenia, splenomegaly or signs of portal hypertension discovered on endoscopy or abdominal ultrasound.

In current study, mean age of the patients was 40.3±8.60 years and had mean BMI 24.4±6.30 kg/m^2. There were majority males 53 (56.4%) and 41 (43.6%) females. Majority were from urban areas. Most common symptoms were abdominal pain, ascites and gastrointestinal bleeding. These were comparable to previous study.[13] Prevalence of PT was found in 3 (3.2%) cases. Prevalence was determined to be 1% in a study of around 24,000 autopsy performed in Sweden [14]. Most of the time, HCC invasion is what causes portal vein blockage in cirrhotic individuals. The thrombus almost seldom originates in the cruciate ligament [15]. Of the individuals with cirrhosis in our research, 14.9% also had a complication called cruciate thrombosis. PT develops in cirrhosis due to a decrease in portal vein flow and an increase in portal pressure in advanced cirrhosis [15]. It is common for a cruoric thrombus in the portal vein to be incomplete and to move or change appearance during follow-up. A second inspection showed a smaller thrombus in almost half of all instances and a larger thrombus in 15% of all cases, according to the limited longitudinal studies available [16]. Decompensated cirrhosis was seen in 96.8% of individuals with cirrhosis in our research.

PT is a common consequence of HCC that is usually fatal. The prevalence of PT in HCC patients ranges from around 10% at diagnosis to 40% at death or liver transplantation [17]. Patients with HCC who also have PT have a worse chance of surviving the disease, fewer therapy options, and a shorter overall survival time.

Overall survival has been reported in studies to range from 2 months to 4 months in PT patients managed with supportive treatment, compared to 10 months to 24 months in HCC patients without PT [18,19]. When compared to full thrombosis, the outlook for incomplete thrombosis is more optimistic.

Multiple prothrombotic illnesses in a same patient, especially when there are recognised risk factors or clear abdominal reasons, support the necessity for thorough thrombophilia screening. Despite the existence of recognised underlying predisposing factors or clear abdominal causes, the frequent detection of numerous prothrombotic illnesses in the same individual underscores the necessity for thorough screening for thrombophilia. When one or more systemic prothrombotic variables are found, it is still important to look for a local component that may be contributing to the problem. Since this concerns crucial choices for long-term anticoagulation, it is pertinent. However, in around 20% of cases, current research cannot pinpoint the root cause. Therefore, it is likely that there are more prothrombotic risk factors that have not been discovered. Due to the prohibitive nature of conducting studies in our location, the identification of overarching causal factors is hampered. [20]

CONCLUSION

According to the findings of our study, the prevalence of PT in hepato-gastroenterology is 3.2%. Cirrhosis exacerbated by HCC is the principal cause of the chronic form, which has a very high prevalence rate.

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