Portal Cavernoma Cholangiopathy—Clinical Characteristics

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Because of the presence of portal cavernoma, paracholedochal and pericholedochal varices, portal cavernoma cholangiopathy (PCC) has become an entity unique to patients with extrahepatic portal venous obstruction (EHPVO). Majority of patients with these abnormalities are asymptomatic and are incidentally detected to have the presence of biliary abnormalities on cholangiography. Minority of patients present with symptoms of chronic cholestasis with or without biliary pain or acute cholangitis related most often to the presence of biliary strictures or stones. Other than the age of the patient and duration of EHPVO, presence of gall stones and common bile duct stones are other risk factors for the causation of symptoms in patients with PCC. This review summarizes the clinical characteristics of asymptomatic and symptomatic patients with PCC giving details of the prevalence of symptoms, their risk factors and overall burden of symptomatic PCC. (J Clin Exp Hepatol 2014;4:S34–S36)

The term portal cavernoma cholangiopathy (PCC) pertains to the abnormalities in the biliary tract occurring predominantly in patients with extrahepatic portal venous obstruction (EHPVO) with portal cavernoma.[1] Though similar changes have been described in patients with cirrhosis liver and non-cirrhotic portal fibrosis (NCPF), but are uncommon and have a different mechanism in these disorders.[2,3] Majority of patients with PCC are asymptomatic with symptoms present only in a minority of patients.[1]

CLINICAL CHARACTERISTICS AND SYMPTOMS OF PORTAL CAVERNOMA CHOLANGIOPATHY

The clinical characteristics of patients with PCC are divided into asymptomatic and symptomatic phases.[1] Patients in asymptomatic phase are detected to have the presence of biliary abnormalities either on endoscopic retrograde cholangiography (ERC) or magnetic resonance cholangiography (MRC) in the absence of any biliary symptoms. Symptomatic patients on the other hand present with features of chronic cholestasis with or without biliary pain or acute cholangitis related most often to the presence of biliary strictures or stones.[1] Most of the series report biliary changes in the absence of symptoms (asymptomatic phase) in around 78–100% of patients whereas biliary symptoms are reported in around 5–38% of patients (Table 1).[4–13] One of the earlier studies from our Institute which described the terminology of pseudosclerosing cholangitis reported the presence of asymptomatic biliary changes on ERCP in all 20 patients (100%).[4] Even our recent experience in a larger number of patients also showed asymptomatic biliary changes in all 53 patients, whereas symptomatic biliopathy was presented in a quarter of these patients.[12]

All patients with symptomatic biliopathy present with history of jaundice though the jaundice at presentation may be present in around 2/3 of such patients.[1] A small percentage of patients may even have jaundice as the sole presentation without any other symptomatology. The history of cholangitis may be present in around half to 2/3rd of patients with number of cholangitis episodes varying from patient to patient. In addition, majority of patients with EHPVO with PCC have history of variceal bleed as the manifestation of primary disease. Patients with EHPVO usually have a long standing disease lasting for 8–10 years before they present with symptomatic PCC. Examination of patients with symptomatic PCC usually reveals the presence of jaundice, an enlarged spleen in the majority and hepatomegaly in half to 2/3rd of patients.[1]

In one of the recent studies, history of jaundice was reported in all 39 patients with EHPVO who presented with symptomatic PCC and were managed surgically.[14] Twenty eight of 39 patients (72%) had jaundice at presentation and 6 patients (15%) had only jaundice as the sole

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Abbreviations: CBD: common bile duct; EHPVO: extrahepatic portal venous obstruction; ERC: endoscopic retrograde cholangiography; MRCP: magnetic resonance cholangiography; NCPF: non-cirrhotic portal fibrosis; PHB: portal hypertensive biliopathy; PCC: portal cavernoma cholangiopathy; PVT: portal vein thrombosis
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Table 1 Frequency of Asymptomatic and Symptomatic Biliary Changes in Patients with EHPVO.

Study	Year	N	Mean (SD) and/or range age	M/F	Frequency of biliary changes (%)	Patients with symptoms (%)
Dilawari and Chawla[4]	1992	20	22 (13–38)	16/4	100	5
Sarin et al[5]	1992	20	9–32	16/4	90	15
Khuroo et al[6]	1993	21	14 (8.8)	13/8	81	38
Bayraktar et al[7]	1995	44	31.5 (9–67)	24/20	94	30
Malkan et al[8]	1999	20	23	12/8	85	10
Nagi et al[9]	2000	43	14–45	25/18	100	19
Condat et al[10]	2003	25	49.5	15/1	84	28
Sezgin et al[11]	2003	36	NA	NA	94	10
Dhiman et al[12]	2006	53	24.5 (13–56)	36/17	100	24.5
Llop et al[13]	2011	67	45 (19–77)	41/26	78	21
Total, mean (range)		329			91 (78–100)	20 (5–38)

Adapted with modification from—Gut. 2007; 56: 1001–8.

presentation without any previous or present symptomatology. Twenty four (62%) patients had history of cholangitis with a mean number of cholangitis episodes averaging around 6 (range 1–25). Thirty three of 39 patients (85%) patients had history of variceal bleed, 24 (62%) patients had history of abdominal pain and 3 patients (8%) presented with awareness of splenomegaly. Examination in these patients revealed splenomegaly in 34 (84%), hepatomegaly in 25 (64%) and only one patient (2.6%) had history of ascites.[14] In another study comprising of 13 patients [Males 9, Median age 21 (21–50 yrs)] with symptomatic PCC, all presented with jaundice and around half of them had presence of cholangitis at presentation.[15] Splenomegaly in these patients with EHPVO was universal with history of upper GI bleed present in 70% and hypersplenism occurring in a quarter of them. Most patients had mild hyperbilirubinemia (less than 2 mg/dL in 46%, 2–5 mg/dL in 38%) and bilirubin more than 5 mg/dL was seen in only 15% of patients. Serum alkaline phosphate was elevated twice the normal in half of these patients. Mean duration of symptoms of symptomatic PCC in these patients were around 2 yrs (3–30 months).[15] Similar data was reported by a study from UK comprising of 13 patients (males 10) with symptomatic PCC.[16] All 13 patients presented with jaundice, 5 had abdominal pain, 10 had history of variceal bleed and but for two patients who earlier had splenectomy, other 11 patients had splenomegaly. Median bilirubin was 11.8 mg/dl (0.7–48.8 mg/dl) with alkaline phosphatase of 1332 (423–4319) IU/L.[16]

RISK FACTORS FOR SYMPTOMATIC PORTAL CAVERNOMA CHOLANGIOPATHY

Most of the data support that the diagnosis of EHPVO usually precede the onset symptomatic PCC by an average of 8–10 years; hence age of the patient and duration of EHPVO become very important risk factors for the development of symptomatic PCC.[15,16] In one of the studies, presentation with variceal bleed which is usually the first symptom in patients with EHPVO, preceded the onset of the jaundice by median of around 7 years (1–10 years). Overall there was a gap of around 8 years (1–11 years) between the diagnosis of EHPVO and the presentation with symptomatic PCC.[15] In a study from Birmingham, UK, mean age of presentation with symptomatic PCC was 41 years (23–61 years), approximately seven years after the presentation with EHPVO [Mean age 34 (2–60) years] thereby also supporting increasing age and duration of EHPVO as the important risk factors for symptomatic PCC.[16] Presence of gall stones and CBD stones are other major risk factors for the causation of symptoms in patients with PCC and are often present in patients presenting with symptomatic disease. In one of the studies, 37 of 39 patients (94.9%) with symptomatic PCC had evidence of dilated intrahepatic biliary radicles on ultrasound with dilated common bile duct (CBD) in the majority of patients [32 (82%)]. Gall stones on ultrasound were seen in 1/3rd of patients and bile duct stones were present in 7 (18%) patients.[14]

There is sparse data on the other factors like extent of thrombosis and the presence of photosystemic shunts affecting the occurrence of symptomatic PCC. In one of the recent studies from Spain, 14 of the 67 patients (21%) with portal vein thrombosis (PVT) experienced episodes of symptomatic PCC. Six patients presented with abdominal pain and raised liver enzymes, three presented with acute cholangitis, four with obstructive jaundice and one patient had acute cholecystitis. When the clinical characteristics of patients with and without symptoms were compared, there were no significant differences in the presentation of PVT (acute vs chronic), sex, length of follow-up or the presence of previous complications such

as variceal bleeding or ascites.[13] Eight asymptomatic patients with prior MR cholangiography developed symptoms of PCC during follow-up. These eight patients had significantly higher levels of alkaline phosphatase, GGT and bilirubin while asymptomatic than the 53 patients who did not develop symptoms of PCC. However, no differences between these two populations were observed in relation to the extension of PVT, cavernoma or the presence of systemic collaterals.[13]

BURDEN OF SYMPTOMATIC PORTAL CAVERNOMA CHOLANGIOPATHY

There is sparse data on the burden of symptomatic PCC. Earlier data from various centers reported EHPVO to be responsible for 15–40% of all patients with portal hypertension with symptomatic PCC occurring in 20% of such patients. Over the years the incidence the EHPVO has decreased and so is the burden of symptomatic PCC. In a study involving 311 patients with portal hypertension over 11 years (1996–2007) showed that 177 (57%) of these had EHPVO as the cause of portal hypertension. Thirty nine (22%) of these EHPVO patients were symptomatic with their biliary changes (Symptomatic PCC).[14]

CONCLUSIONS

In conclusion data on the clinical characteristics of patients with PCC suggest that most patients with PCC are asymptomatic with symptoms seen in around 20% of patients. Symptoms in these patients are usually cholestatic jaundice with or without cholangitis. Age of the patient, duration of EHPVO, presence of gall stones and CBD stones are important risk factors for the symptomatic PCC. More data is required to know the exact burden of symptomatic PCC.

CONFLICTS OF INTEREST

The author has none to declare.

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