Occurrence of Budd-Chiari Syndrome as Adverse Effect of Long Term DMPA Injections: A Case Report and Review the Literatures

Atossa Mahdavi; M.D.[1], Seyed Hamid Hosseini Jadda; M.D.[2]

1 Department of Obstetrics, Gynecology and Infertility, Shariati Hospital, Tehran University of Medical Sciences, Tehran, Iran
2 Department of Gasteroentrology, Milad Hospital, Tehran, Iran

Received June 2012; Revised and accepted August 2012

Abstract

Budd-Chiari syndrome (BCS) refers to thrombosis of hepatic veins as well as intrahepatic or suprahepatic inferior vena cava. We present for the first time a case of possible occurrence of Budd-Chiari syndrome with the history of depot medroxy progesterone acetate (DMPA) injections in a 33-year-old Iranian woman. An underlying disorder can be identified in most of patients with BCS. Many of these disorders are characterized by a hypercoagulable state, but it may occur due to other unknown pathophysiologic factors. Also, medical evaluation was performed for inflammatory, immunologic, and thrombotic disorders as well as hepatic imaging. Considering different case reports like this study may help to decrease the percentage of idiopathic cases.

Keywords: Budd-Chiari Syndrome, Progestin, Thrombosis of the Hepatic Veins

Introduction

Budd-Chiari syndrome (BCS) is defined as cessation or diminution of the normal blood flow out of the liver. However, this term refers to thrombosis of the hepatic veins as well as the intrahepatic or suprahepatic inferior vena cava (1). The two most common symptoms are ascites and hepatomegaly, although, five percent of cases may be asymptomatic (2). There are some risk factors for its occurrence (1). However, BCS is observed in individuals carrying a risk factor for this syndrome, patients with the diagnosis of unexplained liver dysfunction, or in whom ascites is a principal manifesting feature.

Here, we presented a case about possible occurrence of BSC due to history of depot medroxy progesterone acetate (DMPA) injections. To our knowledge, contraceptive pills containing estrogenes may predispose the syndrome, but whether progestins contribute to incidence of BCS is our main concern.

Case Presentation

A 33-year-old Iranian woman was referred with abdominal distension on October 2010. She was primiparous with a 4-year-old child. The patient described herself to have fatigue and vague mid epigastrium discomfort for several months. Her body mass index (BMI) was 22 kg/m^2. Her past medical history was normalShe had been prescribed to depot medroxy progesterone acetate (DMPA) injections

Correspondence:
Atossa Mahdavi , Department of Obstetrics, Gynecology and Infertility, Shariati Hospital, Tehran University of Medical Sciences, Tehran, 1411713135, Iran
Tel: +98 (21) 88008810
Fax: +98 (21) 88220050
E- mail: at-mahdavi@tums.ac.ir

every three months as contraception for the period of a year, which resulted in cessation of regular monthly bleeding.

On physical examination, the vital signs were normal, but overt ascites and probable splenomegaly were detected. Applying of abdominal and pelvic ultra sound scan confirmed ascitic fluid accumulation and splenomegaly, also revealed normal ovaries and uterus. Liver size was reported to be within normal limit.

Ascitic fluid was transudate and had a high serum to ascites protein gradient (>1.1).Complete blood count results revealed mild anemia (Hb=11 mg/dl) and normal leukocyte count. Platelet count was 120000/ml. Urine analysis was normal. The volume of liver enzymes were slightly increased to less than two fold of normal range. Normal total and direct bilirubin was detected. Serum albumin was 3.5 g/dl and total gamaglobulin was increased to 1.3 folds of normal limit.

The report also showed alkaline phosphatase, serum iron, ferritin, TIBC (total iron binding capacity), serum ceruloplasmin in normal range. Alpha fetoprotein and carcinoembryonic antigen (CEA) were within normal limits. The result of viral markers, including: HBS-Ag, anti HCV antibody, RNA polymerase chain reaction (PCR) for HCV, anti HBC antibody, and anti HIV were negative.

Autoimmune markers, including: anti smooth muscle antibody, anti nuclear antibody (ANA) and anticardiolipin antibody were normal. Anti phospholipid syndrome, antithrombin deficiency, protein C and S deficiencies, and prothrombin G20210A mutatations were excluded.

Esophageal varices (G1-2) were observed in upper GI endoscopy. Doppler ultrasonography revealed supra hepatic vein thrombosis while magnetic resonance venography confirmed the diagnosis of Budd-Chiari syndrome.

The patient received conservative medical management for ascites due to hepatic cirrhosis. The woman was introduced to an academic hepatic implantation center.

Discussion

Budd-Chiari syndrome refers to thrombosis of the hepatic veins as well as the intrahepatic or suprahepatic inferior vena cava, in addition, different studies have shown 14% association with portal vein thrombosis (2). It is more common in women and usually appears in the third or fourth decade of life, although, it may occur in any age (3). It can occur as acute (fulminant hepatic failure) or more common as chronic (having signs or symptoms for more than six months with evidence of portal hypertension and cirrhosis) disease. In over 80 percent of patients an underlying disorder can be identified (4). Twenty percent of cases of the Budd-Chiari syndrome occur in women who have been on oral contraceptives (for as little as two weeks), are pregnant, or have delivered a child within the previous two months (5,6). It is presumed that the hypercoagulable state in these women is responsible for this association. However, progesterone components are not responsible for this and we did not find any article in this regard. Chronic myeloproliferative disorders accompanying hypercoagulable state, malignancies, infections or benign space-occupying lesions of the liver, hereditary thrombophilia, and vasculitis due to immunologic diseases are mentioned as the predisposing factors (1,4,7,8). Our case was evaluated and was free from these conditions, although, she was taking depot medroxy progesterone acetate (DMPA) injections every three months as contraception for period of a year. The hypercoagulable state in women who take the combined estrogen and progestin pills is not applied to our patient. Also, hypercoagulable disorders are common causes of BCS in the west of asia (9). Since our patient carried chronic form of the syndrome, we were not able to describe the etiologic relationship between this chronic syndrome and DMPA injections. In addition, we don't know whether other unknown pathophysiologic factors predispose to this syndrome or not. Further research is required to distinguish an idiopathic form of the condition and contribution of occult myeloproliferative disorders in this syndrome. Also, medical evaluation should be performed for inflammatory, immunologic, and thrombotic disorders as well as hepatic imaging. In conclusion, an underlying disorder can be identified in most of patients with the Budd-Chiari syndrome. Many of these disorders are characterized by a hypercoagulable state, but it may occur due to other unknown pathophysiologic factors. Considering different case reports like this study may help to decrease the percentage of cases with idiopathic.

Acknowledgments

We acknowledge the staff of the Milad Hospital for their cooperation in this study. The authors declare they have no conflicts of interest.

References

1. Menon KV, Shah V, Kamath PS. The Budd-Chiari syndrome. N Engl J Med 2004 ; 350:578-85.
2. Darwish Murad S, Valla DC, de Groen PC, Zeitoun G, Hopmans JA, Haagsma EB, et al. Determinants of survival and the effect of portosystemic shunting in patients with Budd-Chiari syndrome. Hepatology 2004; 39:500-8.
3. Mahmoud AE, Mendoza A, Meshikhes AN, Olliff S, West R, Neuberger J, Et al. Clinical spectrum, investigations and treatment of Budd-Chiari syndrome. QJM 1996; 89:37- 43.
4. Darwish Murad S, Plessier A, Hernandez-Guerra M, Fabris F, Eapen CE, Bahr MJ, Et al. (European Network for Vascular Disorders of the Liver). Etiology, management, and outcome of the Budd-Chiari syndrome. Ann Intern Med 2009; 151:167- 75.
5. Lalonde G, Théoret G, Daloze P, Bettez P, Katz SS. Inferior vena cava stenosis and Budd--Chiari syndrome in a woman taking oral contraceptives. Gastroenterology 1982; 82:1452-6.
6. Perarnau JM, Bacq Y. Hepatic vascular involvement related to pregnancy, oral contraceptives, and estrogen replacement therapy. Semin Liver Dis 2008; 28:315-27.
7. Murphy FB, Steinberg HV, Shires GT 3rd, Martin LG, Bernardino ME. The Budd-Chiari syndrome: a review. AJR Am J Roentgenol 1986; 147:9-15.
8. Gupta S, Blumgart LH, Hodgson HJ. Budd-Chiari syndrome: long-term survival and factors affecting mortality. Q J Med 1986; 60:781-91.
9. Jayanthi V, Udayakumar N. Budd-Chiari Syndrome. Changing epidemiology and clinical presentation. Minerva Gastroenterol Dietol 2010; 56:71-80.