

## Case Report

# Disproportionate rise in serum CA 125 in case of budd chiari syndrome: an unusual presentation

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### ABSTRACT

Ca 125 is used as a diagnostic and prognostic biomarker for ovarian cancer. The level of CA 125 is also elevated in benign conditions like Budd Chiari syndrome, liver cirrhosis and heart failure. But very high level of CA 125 is rarely associated with benign conditions and this can mislead the physician. Here we present a case of budd chiari syndrome in postpartum period associated with very high level of CA 125 which is an unusual presentation.

**Keywords:** Budd chiari syndrome, CA 125, Postpartum period

### INTRODUCTION

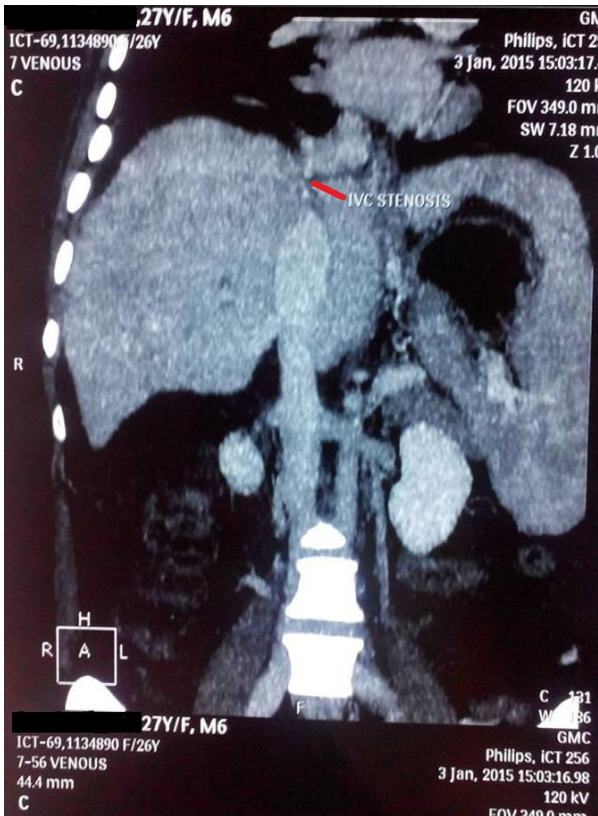
Rise in serum CA 125 is known to be associated with benign conditions like Budd Chiari syndrome and cirrhosis of liver. But very high level is rarely associated with it. In such cases high serum CA125 level can mislead the physician. Budd Chiari syndrome is found to be associated with various hypercoagulable states like pregnancy and postpartum period which is a commonest cause. The incidence of Budd Chiari syndrome is found to be high during pregnancy and postpartum period when compared to females of same age group.<sup>1</sup> Hence during pregnancy or postpartum period, if patient presents with ascites and raised serum CA125 and ascites, one should also try to rule out Budd Chiari syndrome.

### CASE REPORT

A 27 year old female a post natal case (PNC) presented to us with abdominal distension of 1 and 1/2 months duration. She had a full term normal delivery 2 month back. There was no significant present & past history of jaundice, hematemesis and fever. Her general examination revealed normal vitals. There were no any signs of hepatocellular dysfunction, bleeding tendencies.

Her Jugulovenous pressure was normal. Abdominal exam was normal except presence of moderate Ascites. Her chest radiograph, ECG / 2D Echo were normal. Transabdominal ultrasound showed gross ascites, moderate splenomegaly & non visualization of left ovary. Ascitic fluid examination showed normal cytology & transudative fluid. In view of gross ascites and non visualization of left ovary, estimation of serum CA 125 was done which was highly raised. Values were 1689 U/ml (Normal < 35 U/ml). Because of high level of CA 125 & ascites, ovarian malignancy was suspected and she was subjected to CT abdomen. It revealed normal bilateral ovaries without any pelvic mass but it showed short segment stenosis of intrahepatic inferior vena cava at hepatic vein ostium with thrombosis of all three hepatic and multiple venous collaterals suggestive of Budd Chiari syndrome (Figure 1). So final diagnosis of PNC with Budd Chiari syndrome was entertained. Inferior vena cava stenting was done. Post stenting angiography showed good flow (Figure 2). Patient was put on oral warfarin 5 mg daily & was discharged from hospital. INR was maintained between 1.5-2. Patient responded to treatment and resolution of ascites was seen over a period of 2 months. Serum CA 125 was done after 2 month which was 45 U/ml. She is under regular follow

up & estimation of CA 125 is done regularly to know the recurrence of Budd chiari.



**Figure 1: CT abdomen showing intra-abdominal inferior vena cava thrombosis.**



**Figure 2: CT abdomen showing inferior vena cava stent.**

## DISCUSSION

Carcinoma antigen 125 (CA-125) is high molecular mass glycoprotein. It is used as a diagnostic and prognostic biomarker for ovarian cancer. It is the most accurate tumor marker used for monitoring therapeutic response, and in surveillance, for recurrent disease.<sup>2</sup> The level of serum CA-125 is also elevated in certain benign conditions such as heart failure and liver cirrhosis<sup>3</sup>. The mechanism of increased CA-125 in ascites is not found yet. It is assumed that mesothelial cells of peritoneum, pleura and pericardium could synthesize and release CA-125 besides ovarian epithelial cells. Peritoneal mesothelial cells under the pressure of ascites overexpress CA-125 and eventually release the antigen into peripheral blood resulting in elevated level of serum CA-125. In the study done by Zuckerman et al, Mean serum level CA 125 in patients with cirrhosis of liver with ascitis was 321 +/- 283 U/ml.<sup>4</sup> In a multicenter study done in china, Serum CA-125 was significantly higher in patients with primary Budd Chiari syndrome and had a positive correlation with the volume of ascites, severity of liver damage, and poor prognosis. Thus the serum CA-125 levels may be used to estimate the severity and prognosis of Budd Chiari syndrome.<sup>5</sup> In this study, Serum CA125 level in patients with large ascites was 573.5 ± 360.1 U/ml. In our case though patient had moderate ascitis, serum CA125 level was 1689 U/ml which is an unusual disproportionate rise which initially misguided the diagnosis.

Pregnancy is a hypercoagulable state and it is associated with an increased risk of venous thromboembolism. In one study it is found that prevalence of pregnancy related BCS is 6.8% in all BCS patients and 13.1% in female BCS patients, suggesting that pregnancy might be a relatively common etiology of BCS.<sup>1</sup> In a large population-based case control study from the Netherlands, a sixty-fold increase in the risk of venous thrombosis was detected in the puerperium compared with nonpregnant controls.<sup>6</sup> Thus pregnancy and postpartum period are important risk factors for budd chiari syndrome.

Pregnancy related Budd Chiari syndrome in India has strong social determinants and is usually acute and fulminant. In India, prolonged rest postpartum is followed by late and slow mobilization after childbirth. According the report by Dilawari et al., in rural India, puerperal women often experience up to 30 or 40 days of confinement and fluid restriction. Thus, the combination of increased clotting factors, lack of activity, and dehydration may constitute a condition conducive to venous thrombotic complications, potentially leading to a higher prevalence of pregnancy related budd chiari syndrome in Indian studies.<sup>7</sup>

As very high serum CA125 is rarely associated with benign conditions, this can misguide the diagnosis of patient like which has occurred in present case. Hence

before reaching to any final conclusion, one should always rule out benign causes of rise in CA 125 such as Budd Chiari syndrome and cirrhosis of liver. Pregnancy and postpartum period must not be neglected as etiology of Budd Chiari syndrome and one should investigate the patients with symptoms for Budd Chiari syndrome.

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