ISSN NO. 2320-5407

Journal homepage: http://www.journalijar.com

INTERNATIONAL JOURNAL OF ADVANCED RESEARCH

RESEARCH ARTICLE

A CASE OF CHRONIC BUDD CHIARI SYNDROME WITH SPONTANEOUS BACTERIAL PERITONITIS.

Dr. Henna Naqash.

MBBS, MD Internal Medicine; Senior Resident, Deptt. of General Medicine, GMC Srinagar , J&K, India.

Manuscript Info

Manuscript History:

Received: 14 January 2016
Final Accepted: 25 February 2016
Published Online: March 2016

Key words:
ascites , jaundice , hepatic venous thrombosis , hepatomegaly , oral contraceptives.

Corresponding Author

Dr. Henna Naqash.

Abstract

A 32 year old female, delivered 14 months back, presented with progressive abdominal distension, abdominal discomfort and fever of 10 days duration, with past history of admission in a general hospital for 1 month, with complaints of pain right upper abdomen and jaundice. Examination revealed fever, tachycardia and melasma .She had a distended abdomen with sriae and visible veins on both flanks, hepatomegaly and fluid thrill. Rest of the examination was unremarkable. Investigations revealed anemia (normochromic, normocytic) with high ESR. In liver function , she had increased bilirubin and transaminases and hypoalbuminemia. Ascitic fluid analysis showed neutrophillic,culture negative and low SAAG ascites. Abdominal imaging showed hepatic vein thrombosis extending into inferior vena cava with collaterals. Coagulation profile showed Protein C and Protein S deficiency.

Case:-

A 32 year old female, married, housewife, presented to us with 10 days history of abdominal distension and 8 days of fever. Patient was apparently alright 10 days back when she started with abdominal distension, noticed by her due to need for increasing the size (girth) of her clothes. It was gradual in onset, progressive, felt worsened after taking meals with no relieving factor, not localised to any specific area but involved the whole of abdomen. Patient also felt discomfort involving upper abdomen more than the lower, that was aggravated by taking meals but did not disturb her daily activities and was intermittently felt during these 10 days. Patient also felt febrile for last 8 days ,however fever was not documented. She had chills & sweating in between. It was felt continuously by her with a slight relief during night. She also noticed yellowish discoloration in her eyes for last 8-10 days with no change in intensity.

There was no history of nausea / vomiting / hematemesis / alteration in bowel habits / passage of blood or worms with stools / change in the colour of urine or stools/ dysuria / weight loss/ pruritus/ skin rash/abdominal trauma / difficulty with swallowing / belching/ heartburn/ steatorrhea / body aches/ fatigue/ loss of appetite / bleeding from any site / spontaneous or easy bruising. There was no history of any altered behavior / memory / sleep pattern / headache / vertigo / tinnitus / visual disturbances / breathlessness / cough / giddiness / oliguria / swelling of face or feet / chest pain / palpitations / joint pains/oral ulcers / hair loss / dryness of mouth / cold intolerance / voice changes / recent travel.

Patient was admitted 10 years back in a general hospital for 1 month with complaints of pain right upper abdomen and jaundice. She had received medications i/v + oral glucose & got relieved (no records).There was no fever, altered sensorium or vomiting at that time.There was no history suggestive of HTN, DM, ATT intake, heart disease. There was no previous surgical intervention or any blood transfusion in past. Her sleep and appetite were normal but she ate less due to feel of increasing abdominal distention & discomfort with food. Bowel and bladder habits were normal. She was a non smoker, no addictions / no drug or alcohol abuse. She did not take any specific diet but

the same as other family members. She was on a regular diet, no allergies / food fads. She was a non vegetarian and used boiled water for drinking.

She was married for 3 years, delivered 14 months back by normal delivery of a full term baby at a district hospital. Baby was in good health since birth. During pregnancy, she had jaundice & itching during last 3 months. Her doctor advised no medication as it was considered pregnancy related, & it subsided 15 – 20 days after pregnancy. She received Tetanus Toxoid 2 doses as routine during pregnancy. She was lactating presently. No abortions. Para 1. Last menstrual period was 2 days after admission. Menstruated after 21 months.Normal menstrual cycles before: 4 - 5/28.No history of any promiscous behaviour. No oral contraceptive pill use. There was no similar or any other health related problem in family members. They were 5 members in family. No history of deaths at early age. Her husband wss a farmer / labourer and she belongs to Kappuswami socio-economic class IV (upper-lower).She has been using Proton pump inhibitors,Enzyme preparation syrups.Ofloxacin 200 BD x 3 days. (for urine showing pus cells—3-4/hpf) Drotaverine 40 mg tabs sos. No use of any herbal medicines.

Differentials made on history were:-

- Chronic liver disease decompensated by----infection (spontaneous bacterial peritonitis(SBP));Portal veinous thrombosis; hepatocellular carcinoma with underlying chronicity because of chronic viral hepatitis; autoimmune hepatitis; non alcoholic fatty or metabolic liver disease.
- Tuberculous peritonitis.
- Malignancy (ovarian; gastrointestinal)
- Constrictive pericarditis
- Portal or hepatic venous disease (Budd Chiari syndrome; veno-occlusive disease)

On examination:- Patient was conscious, cooperative, well oriented with time, place & person, lying comfortably in bed, average build. Pulse was 90/min, regular, fair in volume, synchronous with other pulses. BP was 110/70mmHg, rt arm, sitting;108/72mmHg,standing. RR 15/min. Temp. 99.9 deg F. Scalp / Hair was normal. There was no pallor, cyanosis or icterus .She had hyperpigmented nose and both cheeks (melasma). No scratch marks. Tongue was moist, pink, oral cavity was normal. No thyromegaly. Neck veins not prominent. JVP not raised. Carotid pulses well felt normally. No lymphadenopathy. Axillary / pubic hair were normal. No flap.Nails were normal. No clubbing. No pedal edema. Wt.=58 kg. Ht.=147cm.Chest and CVS examination was normal. Per abdomen was distended. Striae were present. No other discoloration. All quadrants moving equally with respiration. Umbilicus central, flat , transverse. Visible veins on both flanks. No swelling/ peristaltic movements. No scar / pulsations. Hernial orifices were normal. Temp. was uniform. Non tender. No guarding / rigidity. Liver palpable-----6 cm below costal margin, non tender, regular & smooth surface, rounded edge, firm in consistency, no rub / bruit over it. Hepatojugular reflux : absent. No other organomegaly. Fluid thrill +. Bowel sounds heard normally. Abdominal girth : 91 cm. Examination of CNS, Spine, Breasts, per rectum and per vaginal were normal.

Differentials after examination:-

- Chronic liver disease with decompensation due to SBP, Hepatocellular carcinoma or portal vein thrombosis with underlying chronicity because of autoimmune hepatitis ;non alcoholic fatty liver disease; metabolic liver disease or chronic viral hepatitis.
- Hepatic venous disease like Budd Chiairi disease with inferior vena caval obstruction or veno-occlusive disease.
- Abdominal tuberculosis.
- Malignancy with peritoneal carcinomatosis
- Malignancy with inferior vena caval invasion.

Investigations:-

Hb 8.5 / 8.0g/dL; TLC 7,000 / 6,000; DLC N68,L31,E1 / N60,L27,E4; Platelets 1.38 lac /1.85 lac ; ESR 30mm; MCV 90.9 fl; MCH 26.3 pg; Serum urea 31 / 52 ; Serum creatinine 0.6 /1.1; Sugar(Random) 115 / 108mg/dL; Na 137 / 140mEq/L; K 4.0 / 4.0mEq/L; LFT: Bilirubin 1.9 / 1.3 (normal 0.3 – 1.0mg/dL), Total protein 6.4 / 6.8 (normal 5.5 – 8.0g/dL), Serum albumin 3.23 / 3.4 (normal 3.5 – 5.3g/dL), ALP 182 / 230 (normal 30 – 120);SGOT 176 / 97 (normal 0 – 35U/L);SGPT 256 / 121 (normal 0 – 35U/L);Serum Ca : 9.04 (corrected=9.65mg/dL); PT / INR : 12.2 / 0.9;Calculated Child Pugh score of 7 (Child Pugh class B). Urine examination: 2-3 pus cells and 0-1 RBCs per HPF ,normal specific gravity, no albumin and no sugar, yellowish colour, urobilinogen +, absent bile pigment.

Ascitic fluid analysis:-

- Grossly yellow and slightly cloudy, WBCs 640 with 68% neutrophils and 32% lymphocytes, total neutrophils 435, sugar 117, albumin 2.4,SAAG 0.83,ADA 13.5, negative AFB stain ,sterile culture.
- 2.(Third day) Grossly clear, WBCs 600 with 20% neutrophils and 80% lymphocytes, total neutrophils 120,sugar 119, albumin2.36, SAAG 1.04.

Mantoux test was negative ; Blood culture and urine cultures were sterile .
Hepatitis serology: HBsAg: Neg: IgG anti HCV: Neg.

USG abdomen showed an enlarged liver, 172 mm with coarse echotexture with caudate lobe hypertrophy; portal vein 9 mm in size. No collaterals seen. Spleen normal with size 125 mm. Splenic vein 7 mm in size. Intrahepatic channels not dilated.CBD / Pancreas / Para aortic region / Kidneys / U.B. / Uterus /Adnexae / Cervical canal were all normal. Free fluid in abdomen, Morrison's pouch & pelvis, suggestive of ascites. Kidneys :Rt—102X46mm,Lt—102X42mm with normal echogenicity and maintained CMD. Impression was liver cirrhosis with ascites.

Esophago gastro duodenoscopy was normal with no evidence of any varices or gastropathy.

USG Doppler liver: Mild hepatomegaly with caudate lobe hypertrophy. On colour flow Doppler imaging, portal vein showed hepatopedal flow with peak systolic velocity of 13 cm/sec. The middle hepatic vein was thrombosed. Left hepatic vein was not seen. Right hepatic vein was normal. Intrahepatic collaterals were seen. Findings were suggestive of chronic Budd Chiari syndrome.

Serum CA- 125 : 275.2 U/ ml (Normal 2 – 35).

CECT Abdomen revealed a dysmorphic liver with caudate lobe hypertrophy. It showed early homogeneous central enhancement with delayed patchy peripheral enhancement. There was mild free fluid in peritoneal cavity. Impression was a Budd Chiari syndrome.

Triple phase CT liver :Liver diffusely hypodense on NCCT & shows regular outline with hypertrophied caudate lobe. CECT reveals early enhancement of caudate lobe & portions around IVC with delayed peripheral liver enhancement.MHV & LHV are not opacified, s/o thrombus. Thrombus is seen just extending into IVC near MHV ostium. The intrahepatic IVC is compressed by hypertrophied caudate lobe but is patent. Few subcutaneous & perisplenic collaterals are seen. A large intrahepatic collateral is seen.Spleen is normal. Ascites noted. Impression of Chronic Budd Chiari syndrome Type II.

Echocardiography was normal. There was no evidence of constrictive pericarditis or valvular disease.
Sigmoidoscopy and ileocolonoscopy were normal.
ANA : Negative.
Coagulation profile: Factor V : 32 % (70 – 120); Protein S : 44 % (50 – 140); Protein C : 44.2 % (70 – 140); Antiphospholipid Ab (EIA) Ig G : 4.93U/ml (0.5 – 10), Ig M: 5.89U/ml (0.5 – 10)

Serum Homocysteine (CMIA): 7.42 micromol/l (4.44 – 13.56)

Final diagnosis: Chronic Budd Chiari syndrome type II (likely associated chronic liver disease) with spontaneous bacterial peritonitis.
She was managed with Inj. Ceftriaxone 1g I/V BD X 7 days;Tab. Pantoprazole 40 mg OD;Salt restricted diet;Tab. Lasilactone OD X 5 days followed by BD;Inj. Enoxel 0.6 ml s/c BD X 5 days (started after taking blood sample for coagulation profile);Tab. Acitrom 2 mg OD

She became afebrile from second day onwards. Her abdominal girth was monitored and it decreased to 87 cm. Body weight was also monitored and it decreased to 50 kg.INR was monitored and kept between 2-3.Patient is on continuous GI Surgery and gastroenterology follow up and is doing well. Biliary tract disease is to be ruled out. Further plan to be decided once her ascites subsides. Presently she was well compensated with collateral blood flow.

Discussion

Budd–Chiari syndrome (BCS) is a condition characterised by the symptomatic obstruction or occlusion of the hepatic veins (that can be thrombotic or non thrombotic) , causing hepatomegaly , abdominal pain and tenderness , intractable ascites , mild jaundice , and eventually portal hypertension and liver failure. The syndrome occurs due to an obstruction of hepatic venous outflow at any level from the small hepatic veins to the junction of the inferior vena cava (IVC) with the right atrium [1].The syndrome is named after George Budd (a British physician) and Hans Chiari (an Australian pathologist).This syndrome presents as the triad of abdominal pain, ascites, and hepatomegaly. Overt Budd-Chiari syndrome generally requires the occlusion of at least 2 hepatic veins as that of a single vein is usually silent [2]. As classified by the severity of presentation, BCS has been observed in proportions of fulminant (5%) [3], acute (20%) [4], and subacute or chronic (60%) [5] in reported series. Etiology can be found in more than 80 % of cases. BCS can be primary or secondary to conditions like tumours or infections including tuberculosis. A related condition that needs to be differentiated from BCS is the veno-occlusive disease that occurs in bone marrow transplant recipients , follows intake of certain alkaloids or occurs in hereditary form and is caused by injury to the hepatic venous endothelium. Thrombotic occlusion of hepatic veins causing Budd–Chiari syndrome occurs in 1 in million individuals [6]. Most patients with Budd-Chiari syndrome have an underlying thrombotic diathesis and Budd–Chiari syndrome can be the first symptom of such a tendency, although in approximately one third of patients, the condition is idiopathic. Examples of thrombotic predisposition include protein C deficiency, protein S deficiency, the Factor V Leiden mutation, hereditary anti-thrombin deficiency and prothrombin gene mutation G20210A [7]. Primary membranous obstruction of the IVC is a sequela of IVC thrombosis, without any hepatic vein thrombosis. It accounts for 60% of BCS patients in Asia [8],[9].Patients can be asymptomatic (≤20%) [20] or present with few symptoms only in case the liver has got enough time to develop collaterals and decompress. However,as the syndrome progresses, it can lead to liver failure and portal hypertension with associated symptoms like hematemesis or encephalopathy. Color and pulsed-Doppler ultrasound is recommended as the first-line investigation and has a sensitivity of 80% [10].Caudate lobe enlargement is often seen.

Regional differences are also seen as revealed by Valla D. Isolated IVC or combined IVC and hepatic vein block has predominated in Asia, whereas pure hepatic vein obstruction has predominated in Western countries [11].The prognosis of BCS depends on the rapidity of onset of disease , severity of liver dysfunction at diagnosis, the anatomic sites of thrombosis, and etiology. Although several prognostic markers have been identified, these have not been validated prospectively and there have been no randomized therapeutic studies [12].Short-term prognosis of IVC obstruction is good, but long-term data is scanty [9]. The prognosis is poor in untreated patients with Budd-Chiari syndrome , with death resulting from progressive liver failure in 3 months to 3 years from the time of the diagnosis[13].

Anticoagulation therapy must be used routinely, before and after specific therapy, regardless of whether a thrombophilic disorder is diagnosed or not [14].In addition , the relatives of BCS patients need to be investigated and counselled irrespective of diagnosing a thrombophillic disorder [15].Pharmacologic management includes fluid and sodium restriction , diuretics and anticoagulation. Thrombolysis with recombinant tPA (tissue plasminogen activator) was studied by Sharma S et al and was found to be useful in adjunctive management of BCS when the drug was infused locally into recently thrombosed veins that had appreciable flow following partial recanalisation. Thrombolysis was clearly of benefit in the repermeation of totally or partially occluded hepatic veins / TIPS (transjugular intrahepatic portosystemic shunting) when early detection of new thrombus followed interventional procedures such as balloon angioplasty or stenting of hepatic veins.[16]. As for angioplasty, the experience of Martin LG et al. suggests that balloon angioplasty is a safe and effective treatment for patients with Budd-Chiari syndrome. This therapy is not definitive, but moderates the severity of the disease until collateral venous pathways develop. However, multiple angioplasties are required for the long-term care of these patients[17]. Failure of thrombolysis or angioplasty and the presence of a diffuse hepatic-vein thrombosis are indications for shunting. Surgical shunts have largely been superseded by TIPS. No survival advantage has been shown to be independent of liver disease severity, the type of shunt (including TIPS), or the interval between diagnosis and procedure, with the exception of surgical shunts in patients with mild hepatic impairment (82% vs 68% survival at 5 years) [18],[19]. Liver reserve and potential reversibility of the liver injury must be assessed when deciding whether shunting procedures will be safe. The therapeutic principle of portosystemic shunting is to convert the portal vein into an outflow tract (reversed portal flow), thus decompressing the sinusoids. A hypertrophied caudate lobe often makes the side-to-side portacaval shunt difficult to construct.A TIPS procedure should be attempted before a surgical one, allowing a trial of shunting—if this fails, liver transplantation is indicated. TIPS should be considered as first-line therapy if variceal bleeding occurs, for acute and chronic BCS, and also in patients with fulminant BCS if a liver

donor is not available within 2–3 days. Following portosystemic shunting, however, the 5-year survival rate for patients with the syndrome is 38-87%. Patients who have undergone balloon dilatation or stenting of their lesions require follow-up catheterizations and, frequently, repeat dilatations or stent replacement. These patients should also have routine surveillance for hepatocellular carcinoma [20],[21]. Portal hypertension might not worsen even if stent dysfunction occurs, possibly due to de novocollateral circulation [22]. However, maintaining TIPS patency has been shown to prolong transplantation-free survival [23]. A TIPS can be placed even if there is portal vein thrombosis [24].Liver transplantation is reserved for fulminant and progressive chronic forms of BCS. An evaluation for liver transplantation should be started in young patients, those with a coagulation-factor mutation, histologic cirrhosis, and liver failure or shunt dysfunction. Fulminant BCS needs an emergency liver transplantation which has also been used as a salvage procedure for fulminant hepatic failure induced by surgical shunting [25],[26],[27].The actuarial 5-year survival rate following liver transplantation is 70%[28],[29],[30].

Figure 1: Dilated veins on flanks with blood flow below upwards.

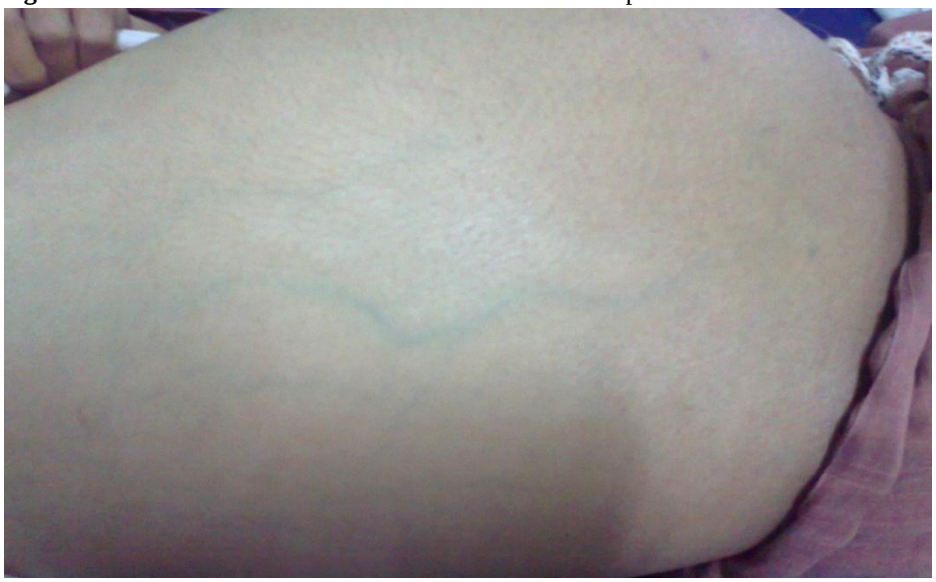
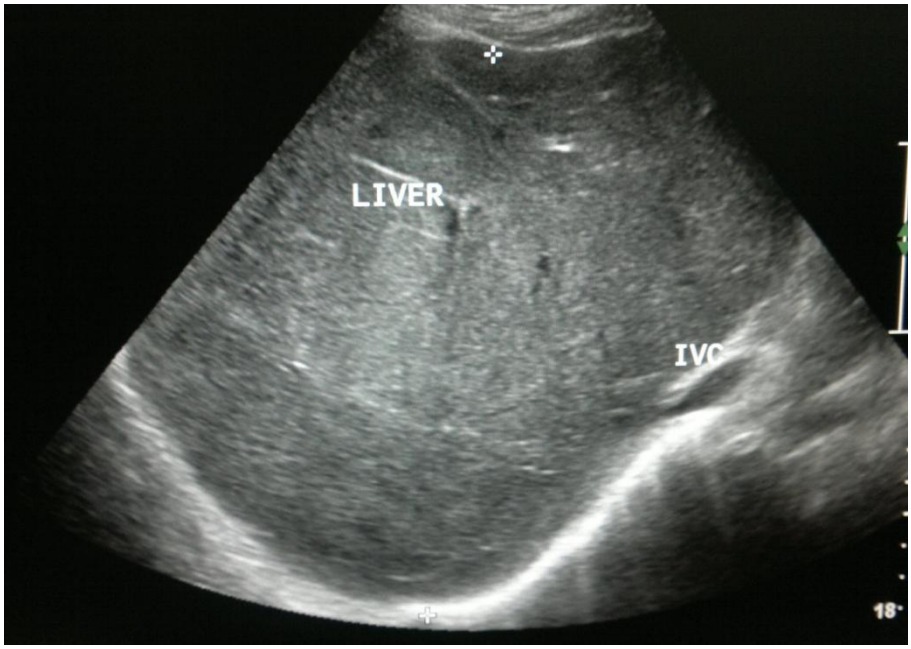


Figure 2: USG Doppler.



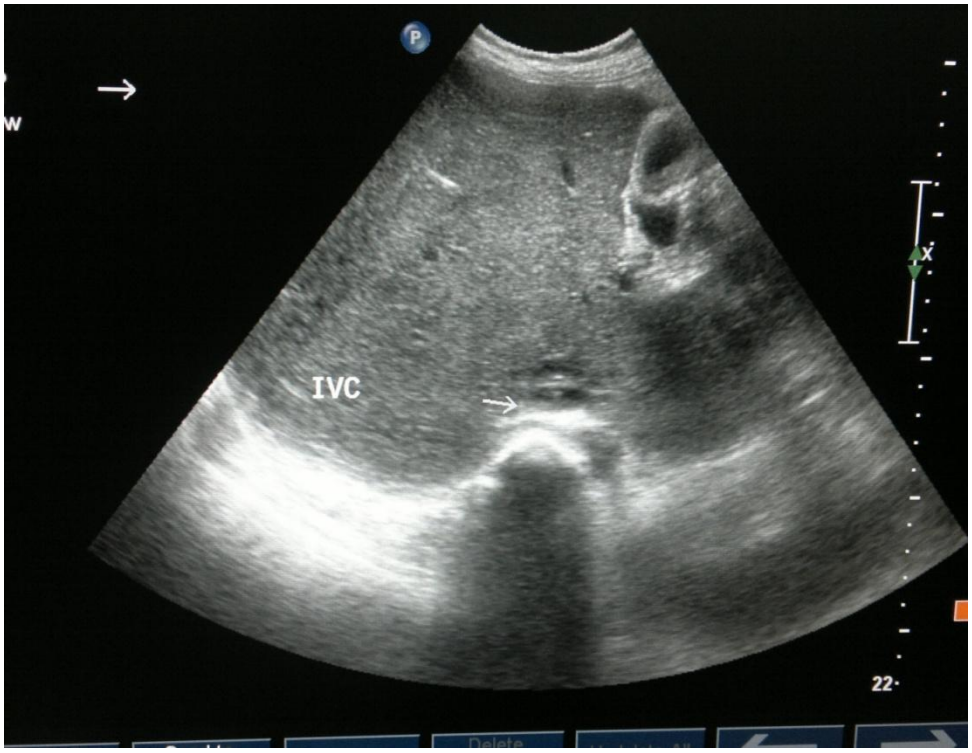


Figure 3: USG Doppler.

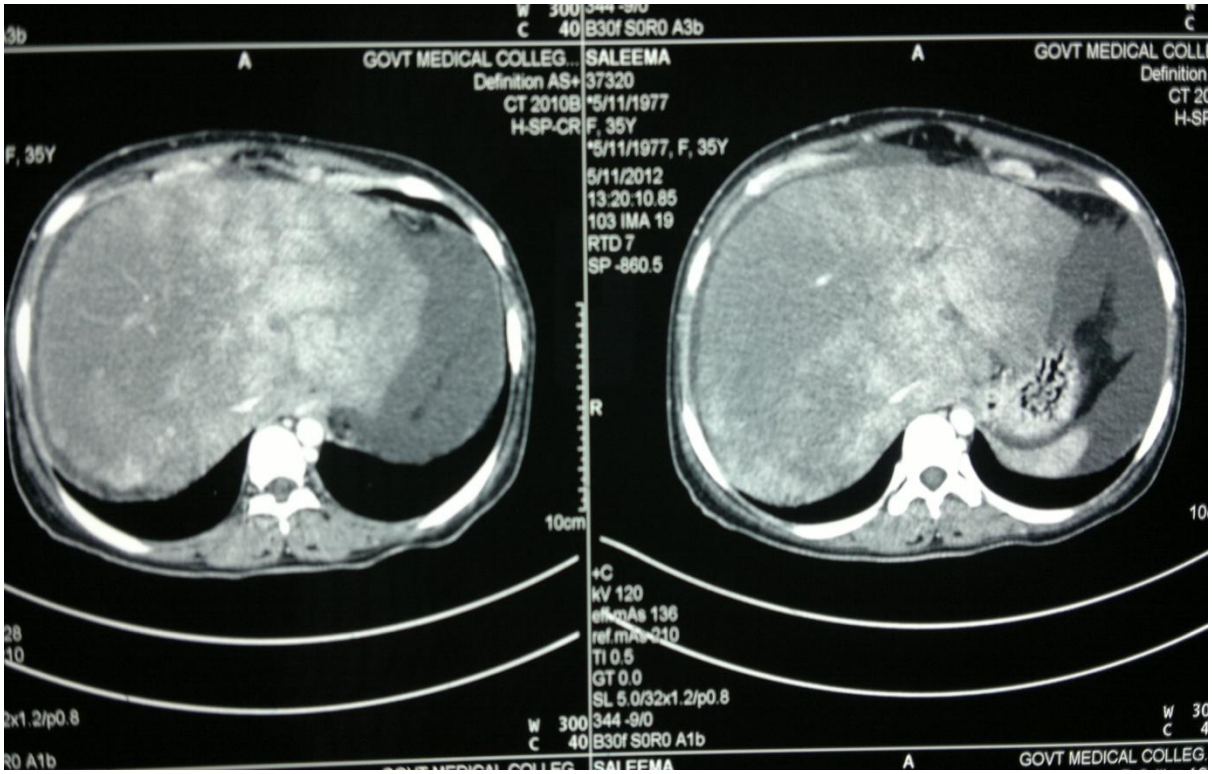


Figure 4: Triple phase CT liver.

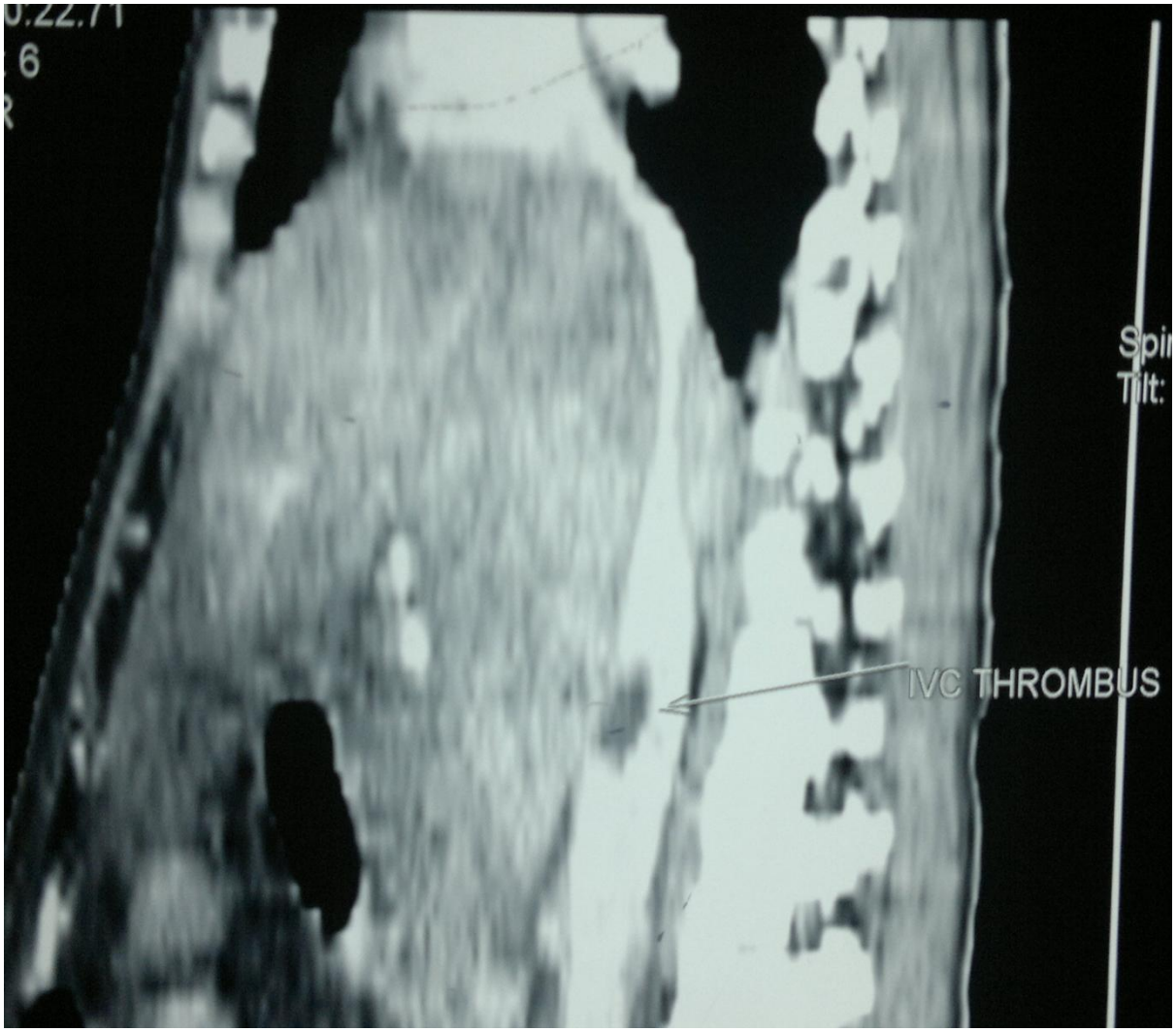


Figure 5: Triple phase CT longitudinal cut.

References:-

1. Okuda K et al. (1998) Proposal of a new nomenclature for Budd–Chiari syndrome: hepatic vein thrombosis versus thrombosis of the inferior vena cava at its hepatic portion. Hepatology 28: 1191–1198 .
2. Chaudhuri M, Jayaranganath M, Chandra VS. Percutaneous recanalization of an occluded hepatic vein in a difficult subset of pediatric Budd-Chiari syndrome. Pediatr Cardiol. 2012 Jun. 33(5):806-10
3. Valla DC (2003) The diagnosis and management of the Budd–Chiari syndrome: consensus and controversies. Hepatology 38: 793–803.
4. Murad SD et al. (2004) Determinants of survival and the effect of portosystemic shunting in patients with Budd–Chiari syndrome. Hepatology 39: 500–508.
5. Hadengue A et al. (1994) The changing scene of hepatic vein thrombosis: recognition of asymptomatic cases. Gastroenterology 106: 1042–1047 .
6. Rajani R, Melin T, Björnsson E, Broomé U, Sangfelt P, Danielsson A, Gustavsson A, Grip O, Svensson H, Lööf L, Wallerstedt S, Almer SH. (Feb 2009). "Budd–Chiari syndrome in Sweden: epidemiology, clinical characteristics and survival - an 18-year experience". Liver International 29 (2): 253–9.
7. Podnos YD, Cooke J, Ginther G, Ping J, Chapman D, Newman RS, Imagawa DK (Aug 2003). "Prothrombin Mutation G20210A as a Cause of Budd–Chiari Syndrome" (PDF).Hospital Physician 39 (8): 41–4.
8. Okuda H et al. (1995) Epidemiological and clinical features of Budd–Chiari syndrome in Japan. J Hepatol 22: 1–9.

9. Okuda K (2002) Inferior vena cava thrombosis at its hepatic portion (obliterative hepatocavopathy). Semin Liver Dis 22: 15–26.
10. Ohta M et al. (1994) Analysis of hepatic vein waveform by Doppler ultrasonography in 100 patients with portal hypertension. Am J Gastroenterol 89: 170–175.
11. Valla D.Hepatic venous outflow tract obstruction etiopathogenesis: Asia versus the West.J Gastroenterol Hepatol 2004;19:S204-S211.
12. Valla DC (2002) Hepatic vein thrombosis (Budd–Chiari syndrome). Semin Liver Dis 22: 5–14 .
13. Khuroo MS, Al-Suhabani H, Al-Sebayel M, et al. Budd-Chiari syndrome: long-term effect on outcome with transjugular intrahepatic portosystemic shunt. J Gastroenterol Hepatol. 2005 Oct. 20(10):1494-502.
14. Marco Senzolo, Evangelos C Cholongitas, David Patch and Andrew K Burroughs. Update on the classification, assessment of prognosisand therapy of Budd–Chiari syndrome.Nature Clinical Practice Gastroenterology & Hepatology (2005) 2, 182-190.
15. Janssen HL et al. (2000) Factor V Leiden mutation, prothrombin gene mutation, and deficiencies in coagulation inhibitors associated with Budd–Chiari syndrome and portal vein thrombosis: results of a case-control study. Blood 96: 2364–2368.
16. Sharma S, Texeira A, Texeira P, Elias E, Wilde J, Olliff SP. Pharmacological thrombolysis in Budd Chiari syndrome: a single centre experience and review of the literature. J Hepatol 2004 Jan;40 (1):172-80.
17. Martin LG[1], Henderson JM, Millikan WJ Jr, Casarella WJ, Kaufman SL. Angioplasty for long-term treatment of patients with Budd-Chiari syndrome.AJR Am J Roentgenol.1990 May;154(5):1007-10.
18. Langlet P et al. (2003) Clinicopathological forms and prognostic index in Budd–Chiari syndrome. J Hepatol 39: 496–501.
19. Tang TJ et al. (2001) The prognostic value of histology in the assessment of patients with Budd–Chiari syndrome. J Hepatol 35: 338–343 .
20. Goel RM, Johnston EL, Patel KV, Wong T. Budd-Chiari syndrome: investigation, treatment and outcomes.Postgrad Med J. 2015 Dec. 91 (1082):692-7.
21. Ren W, Qi X, Yang Z, Han G, Fan D. Prevalence and risk factors of hepatocellular carcinoma in Budd-Chiari syndrome: a systematic review. Eur J Gastroenterol Hepatol. 2013 Jul. 25(7):830-41.
22. Perello A et al. (2002) TIPS is a useful long-term derivative therapy for patients with Budd–Chiari syndrome uncontrolled by medical therapy. Hepatology 35: 132–139 .
23. Rossle M et al. (2004) The Budd–Chiari syndrome: outcome after treatment with the transjugular intrahepatic portosystemic shunt. Surgery 135: 394–403.
24. Mancuso A et al. (2003) Budd–Chiari syndrome with portal, splenic, and superior mesenteric vein thrombosis treated with TIPS: who dares wins. Gut 52: 438.
25. Ringe B et al. (1995) Which is the best surgery for Budd–Chiari syndrome: venous decompression or liver transplantation? A single-center experience with 50 patients. Hepatology 21: 1337–1344.
26. Slakey DP et al. (2001) Budd–Chiari syndrome: current management options. Ann Surg 233: 522–527.
27. Thompson NP et al. (1994) Emergency rescue hepatic transplantation following shunt surgery for Budd–Chiari syndrome. Eur J Gastroenterol Hepatol 6: 835–837.
28. Montano-Loza AJ, Tandon P, Kneteman N, Bailey R, Bain VG. Rotterdam score predicts early mortality in Budd-Chiari syndrome, and surgical shunting prolongs transplant-free survival. Aliment Pharmacol Ther. 2009 Nov 15. 30(10):1060-9.
29. Valla DC. Primary Budd-Chiari syndrome. J Hepatol. 2009 Jan. 50(1):195-203.
30. Segev DL, Nguyen GC, Locke JE, et al. Twenty years of liver transplantation for Budd-Chiari syndrome: a national registry analysis. Liver Transpl. 2007 Sep. 13(9):1285-94.