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INTRAHEPATIC CHOLESTASIS OF PREGNANCY (IHCP): A CASE SERIES ANALYSIS

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Abstract
Introduction: Intrahepatic cholestasis of pregnancy (ICP) is a liver disorder affecting pregnant women in the later trimesters. It is characterized by itching (pruritus) and elevated serum bile acids, potentially leading to adverse fetal outcomes. This study aimed to analyze the clinical presentation, diagnosis, and neonatal outcomes of ICP patients.
Methods: A retrospective review of seven pregnant women diagnosed with ICP at Saveetha Medical College was conducted. Data on symptoms, laboratory findings, management, and neonatal outcomes were collected and analyzed.
Results: All seven cases presented with pruritus, primarily on palms and soles. Liver function tests showed elevated levels of bilirubin, protein, liver enzymes (ALT, AST, ALP), and serum bile acid, while gamma-glutamyl transferase (GGT) remained normal. Delivery was performed in all cases, with some requiring cesarean sections due to fetal distress. Two newborns experienced mild respiratory distress at birth, requiring oxygen supplementation.
Conclusion: This case series highlights the typical presentation of ICP with pruritus and abnormal liver function tests, potentially leading to complications like fetal distress. Early diagnosis and management are crucial. Future research should explore the use of Ursodeoxycholic acid (UDCA) in these cases, investigate long-term neonatal outcomes, and utilize a larger patient group to identify risk factors and refine management strategies for ICP.
Keyword: Intrahepatic cholelithiasis of pregnancy, ICP, hepatic and biliary disorders during pregnancy and case series

INTRODUCTION

Intrahepatic cholestasis of pregnancy (ICP) or obstetric cholestasis (OC) is the predominant hepatic disorder that occurs during pregnancy, particularly in the later stages of the second and third trimesters. It is characterized by pruritus, increased serum bile acids, and other liver function tests. The symptoms and metabolic anomalies quickly resolve following childbirth. [1] [2] Negative obstetric outcomes like respiratory distress syndrome, stillbirth, meconium passing, and fetal asphyxiation are more likely when ICP is present. Intrahepatic cholestasis of pregnancy (ICP) occurs in 0.2 to 2% of pregnancies. [3] [4] When the diagnosis of intrahepatic cholestasis of pregnancy (ICP) is confirmed, prompt treatment is required. The main objective of therapy is to reduce the chances of perinatal morbidity and mortality while relieving maternal symptoms. Ursodeoxycholic acid (UDCA) is the preferred first-line agent for treating intrahepatic cholestasis of pregnancy (ICP).[9] Research has not demonstrated the efficacy of regular antepartum fetal testing in patients with intrahepatic cholestasis during pregnancy. However, many healthcare practitioners consider it reassuring to conduct regular antenatal testing for patients with ICP. [5]

Case 1: A 28-year-old Gravida 2 para 1 live 1 with a previous normal delivery at 36 weeks came to Saveetha Medical College with complaints of itching over the abdomen, palms, and soles. Foetal movements are perceived well. She had no other significant complaints. All trimesters were uneventful. On examination, her vitals were stable. An abdominal examination revealed a single live intrauterine fetus in a longitudinal lie with a cephalic presentation. The liver function test revealed elevated levels of total bilirubin, direct bilirubin, total protein, alanine transaminase, aspartate aminotransferase, and alkaline phosphatase. The gamma glutamine transferase was normal. Serum bile acid was elevated. We admitted the patient and conservatively managed him by monitoring his vitals, fetal cardiac activity, and non-stress tests on a daily basis. The patient underwent an emergency Caesarean section at 36 weeks +2 days due to fetal distress. The intraoperative findings revealed a thin, meconium-stained liquor. Baby delivered and cried immediately. Both the placenta and membrane were delivered simultaneously. The baby was born alive, late preterm, weighing 2.1 kg, with an APGAR score of 8/10, 9/10, and mild respiratory distress, necessitating oxygen supplementation for 3 days. The postoperative period was uneventful.

Case 2: At 33 weeks, a 29-year-old Gravida 5 abortion 4 came to Saveetha Medical College with complaints of generalized itching predominately over the palms and soles. She was able to perceive fetal movements well. On examination, her vitals were stable. On abdominal examination, there were scratch marks present all over the abdomen. On palpation, a single live intrauterine fetus was seen in a longitudinal position with a cephalic presentation. The basic routine tests showed that everything was normal except for the liver function test, which showed high levels of total bilirubin, direct bilirubin, total protein, Alanine transaminase, aspartate aminotransferase, and alkaline phosphatase. The gamma glutamine transferase was normal. The patient's serum bile acid level exceeded 50, prompting an emergency Caesarean section due to the fetal alarming sign and decreased perception of fetal movements. Intraoperative findings showed Hind water-thick meconium. After delivery, the baby let out a weak cry. We delivered the

placenta and membrane in toto, staining the meconium. The baby was alive, preterm, 2 kg, born with 6/10 and 8/10 APGAR, and kept on NIV for 4 days. The postoperative period was uneventful.

Case 3: At 37 weeks + 3 days, a 24-year-old primi came to Saveetha Medical College with complaints of generalized itching. She was able to perceive fetal movements well. She had no other significant complaints. All trimesters were uneventful. On examination, her vitals were stable. Upon inspection, there were scratch marks all over the abdomen. On palpation, a single live intrauterine fetus was seen in a longitudinal position with a cephalic presentation. The liver function test revealed elevated levels of total bilirubin, direct bilirubin, total protein, alanine transaminase, aspartate aminotransferase, and alkaline phosphatase. Gamma glutamine transfer ace was normal. Serum bile acid was elevated. The patient underwent an emergency Caesarean section due to fetal distress. The intraoperative findings revealed a thick, meconium-stained liquor. Baby delivered and cried immediately. We delivered the placenta and membrane in toto and stained the meconium. The baby is alive, term, 3 kg, and born with a 6/10, 8/10 APGAR. Had mild respiratory distress, so the baby was given oxygen supplementation for 2 days. The postoperative period was uneventful.

Case 4: A 30-year-old, Gravida 2, abortion 1 at 37 weeks, came to Saveetha Medical College with complaints of generalized itching and pain in the abdomen on and off for 2 days. She was able to perceive fetal movements well. On examination, her vitals were stable, and on inspection, there were scratch marks present all over the abdomen. On palpation, a single live intrauterine fetus was seen in a longitudinal position with a cephalic presentation. The basic tests showed that everything was within normal limits, except for the liver function test, which showed that total bilirubin, direct bilirubin, total protein, Alanine transaminase, aspartate aminotransferase, and alkaline phosphatase were all higher than normal. The gamma glutamine transferase was normal. Serum bile acid was elevated. She progressed spontaneously and gave birth to a live, term 2.9 kg baby with an 8/10, 9/10 APGAR.She drained the thin meconium-stained liquor, and the baby delivered the cephalic, placenta, and membrane in toto. The postoperative period was uneventful.

Case 5: A 23-year-old Gravida 2 para 1 live 1 with a previous normal delivery at 36 weeks + 2 days came to Saveetha Medical College with complaints of itching over the abdomen. She was able to perceive fetal movements well. She had no other significant complaints. All trimesters were uneventful. On examination, her vitals were stable. The abdominal examination revealed a single live intrauterine fetus in a longitudinal position with a cephalic presentation. A basic investigation showed that most of the results were normal, but the liver function test showed that levels of total bilirubin, direct bilirubin, total protein, Alanine transaminase, aspartate aminotransferase, and alkaline phosphatase were higher than normal. The gamma glutamine transferase was normal. Serum bile acid was elevated. The patient underwent an emergency Caesarean section due to fetal distress. Intraoperative findings showed clear liquor. Baby delivered and cried immediately. The placenta and membrane are delivered simultaneously. Baby is alive, late preterm, 2.5 kg, and born with an 8/10, 9/10 APGAR. The postoperative period was uneventful.

Case 6: At 36 weeks +4 days, a 23-year-old prime came to Saveetha Medical College with complaints of itching over the abdomen. She was able to perceive fetal movements well. She had no other significant complaints. All trimesters were uneventful. On examination, her vitals were stable. The examination of her abdomen revealed a single live intrauterine fetus in a longitudinal lie, presented in a cephalic position. The basic routine investigation revealed normal limits, with the exception of the liver function test, which showed elevated levels of total bilirubin, direct bilirubin, total protein, lanine transaminase, aspartate aminotransferase, and alkaline phosphatase. Gamma glutamine transfer ace was normal. Serum bile acid was elevated. Due to fetal distress, we took the patient to an emergency Caesarean section. The intraoperative findings revealed a thin, meconium-stained liquor. Baby delivered and cried immediately. Both the placenta and membrane were delivered simultaneously. Baby is alive, late preterm, 2.6 kg, and born with an 8/10, 9/10 APGAR. The postoperative period was uneventful.

Case 7: A 30-year-old Gravida 2 para 1 live 1 with a previous normal delivery at 36 weeks + 2 days came to Saveetha Medical College with complaints of itching over the abdomen. She was able to perceive fetal movements well. She had no other significant complaints. All trimesters were uneventful. On examination, her vitals were stable. The abdominal examination revealed a single live intrauterine fetus in a longitudinal position with a cephalic presentation. The basic routine tests showed that everything was normal except for the liver function test, which showed high levels of total bilirubin, direct bilirubin, total protein, Alanine transaminase, aspartate aminotransferase, and alkaline phosphatase. Gamma glutamine transfer ace was normal. Serum bile acid was elevated. The patient underwent an emergency Caesarean section due to fetal distress. The intraoperative findings revealed a thick, meconium-stained liquor. Baby delivered and cried immediately. We delivered the placenta and membrane in toto and found them stained with meconium. Baby is alive, late preterm, 2.5 kg, and born with an 8/10, 9/10 APGAR. The postoperative period was uneventful.

DISCUSSION

During pregnancy, ICP affects women in their third trimester. [1] The predominant symptom of ICP is pruritus, specifically on the palms and soles. This itching tends to worsen as the pregnancy progresses and usually disappears within 48 hours after birth. Pruritus may arise from various causes. The cause may be an increase in bile acids or the accumulation of sulfated progesterone metabolites. During the third trimester of pregnancy, there is an increase in the levels of progesterone and estrogen. These hormones lead to the production of more sulfated metabolites, which in turn impede the hepatocellular bile salt export pump. Patients with ICP exhibit heightened sensitivity to these hormones, resulting in the development of cholestasis. [5] [6] The etiology of ICP remains unclear; however, it is believed to be complex, involving genetic, hormonal, and environmental factors. The presence of family clustering and differing incidence rates across different geographic locations clearly suggest that the cause of ICP is Serum transaminases (SGOT and SGPT) levels are the key liver functions considered when diagnosing ICP.[4] One of the clearest signs of intrahepatic cholestasis of pregnancy (ICP) is having high levels of serum bile acids, specifically at a concentration of 10 micromol/l. [8] Our study revealed elevated liver profiles, including total bilirubin, direct bilirubin, total protein, Alanine transaminase, aspartate aminotransferase, and alkaline phosphatase. The gamma glutamine transferase was normal. Serum bile acid was elevated. Following delivery, we found two babies experiencing

respiratory distress, which we managed with appropriate treatment.

CONCLUSION

This case series highlights the clinical presentation, diagnosis, and potential neonatal outcomes of intrahepatic cholestasis of pregnancy (ICP). All seven patients presented with pruritus, abnormal liver function tests with elevated bile acids, and underwent delivery, with two experiencing mild neonatal respiratory distress. The findings support the established characteristics of ICP and the potential association with adverse perinatal outcomes. Early diagnosis and management are crucial to improving maternal well-being and optimizing fetal health. Further areas of exploration could include investigating the use of ursodeoxycholic acid (UDCA) in these cases, analyzing the long-term outcomes of the newborns, and studying a larger patient group to identify potential risk factors and refine management strategies.

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