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A rough way to maternity. A case report of successful delivery among a 28-year-old woman with liver cirrhosis due to autoimmune hepatitis and a history of recurrent pregnancy losses

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ABSTRACT

Pregnancy in cirrhotic patients, especially when cirrhosis is due to autoimmune hepatitis, has been associated with increased perinatal and maternal mortality. A woman with cirrhosis due to autoimmune hepatitis had a history of recurrent miscarriages and placental abruption. She underwent a preventive procedure of endoscopic variceal ligation before her sixth pregnancy. During this pregnancy, we treated her with progesterone and low-dose ASA to prevent preeclampsia. The woman had recurrent ascites, grade I fetal growth restriction (FGR), intrahepatic cholestasis of pregnancy, and vasa previa. At 30 weeks and 6 days of gestation, the woman underwent an elective cesarean delivery of a healthy premature baby. The patient had a severe postpartum hemorrhage. Hemostatic techniques controlled the bleeding. Delayed wound healing, flare of autoimmune hepatitis with complications, occurred during the postpartum period, which was successfully managed, with the complications resolving. Advanced liver cirrhosis and portal hypertension required intensive medical care. Proactive management steps ensured a successful patient outcome. The case shows how a multifaceted approach can lead to a successful outcome in a complex pregnancy.

Keywords: Liver cirrhosis, Autoimmune hepatitis, High-risk pregnancy, Postpartum hemorrhage, Fetal growth restriction

1. INTRODUCTION

Pregnancy in women with liver cirrhosis is uncommon, largely because cirrhosis adversely affects natural fertility (Joshi et al., 2010). Globally, the most common causes of cirrhosis in women are viral hepatitis, autoimmune hepatitis (AIH), alcoholic liver disease, and non-alcoholic fatty liver disease (Giard & Terrault, 2016).

According to current statistics, cirrhosis occurs in 0.045% of women of reproductive age, and the incidence rate is one in every 4,500 pregnancies (Aggarwal et al., 1999; Palatnik & Rinella, 2017; Tan et al., 2008).

In the past, clinicians regarded pregnancy in cirrhotic patients as a rare clinical scenario. Decompensated cirrhosis explains this trend, as the condition diminishes natural fertility (Esposti, 2014; Sauerbruch & Wong, 2019; Tsochatzis et al., 2014).

When compared to the general public, pregnant patients with cirrhosis face much steeper odds of complications. They are more prone to preterm births, require cesarean sections more often, and show higher rates of both preeclampsia (PE) and small-for-gestational-age infants (Flemming et al., 2020).

However, more recent data show that there is an increasing rate of births in women with cirrhosis and a simultaneous decrease in perinatal complications (Sayed & Flemming, 2023). Improved liver therapies and reproductive technologies drove the positive trend (Esposti, 2014; Sauerbruch & Wong, 2019; Tsochatzis et al., 2014).

2. CASE REPORT

In 2017, we admitted a 20-year-old female patient to the Department of Infectious Diseases, Hepatology, and Liver Transplantation. At the time of admission, she had elevated liver enzymes, jaundice, asthenia, abdominal pain, and decreased appetite. Her initial laboratory tests revealed abnormal levels of aspartate aminotransferase (AST)-696 U/L, alanine aminotransferase (ALT)- 407 U/L, alkaline phosphatase (ALP)- 247 U/L, international normalized ratio (INR)-1.34, immunoglobulin G (IgG)- 4687 mg/dL, and total bilirubin (7.24 mg/dL). The patient underwent serological testing for hepatitis A, B, C, and E viruses, as well as cytomegalovirus. All results were negative. Histopathological examination of the liver established a diagnosis of autoimmune hepatitis. The clinical team started her on 30 mg of prednisone and 50 mg of azathioprine daily. After this, symptoms and liver enzyme levels decreased. We started 10 mg of propranolol for her tachycardia and phytomenadione at a dosage of 10 mg for coagulopathy. The patient is currently receiving follow-up in the hepatology clinic. Two years following the diagnosis of AIH, the patient intends to plan a pregnancy. Because the patient remained stable, our clinical team stopped all medications except for a 10 mg maintenance dose of prednisone. Her first two pregnancies in 2019 and 2021 ultimately resulted in early miscarriages at eight and nine weeks.

In 2022, the patient conceived again, and a first-trimester ultrasound examination indicated that the fetus was developing properly with low risks of trisomy 21, trisomy 13, and trisomy 18, as well as preeclampsia. Thereafter, in the 19th week, the patient had clinical deterioration, manifested by marked ascites and generalized edema. We introduced loop diuretics; shortly after this treatment, the patient developed regular uterine contractions and vaginal bleeding. Upon her admission to the Department of Obstetrics and Gynecology, we observed a dynamic deterioration of laboratory coagulation parameters and clinical signs of hemorrhagic shock. Due to premature placental abruption, intrauterine fetal death, and the patient's life-threatening condition, we performed an emergency dilation and curettage (D&C). During the procedure, due to persistent bleeding, we applied a uterine balloon tamponade (Bakri balloon). We transfused four units of packed red blood cells (PRBCs), 3 units of platelet concentrate, and 3 units of fresh frozen plasma (FFP). A clinical team, including obstetricians, anesthesiologists, internists, and hepatologists, cared for the patient. The clinical team increased her prednisone dosage from 10 mg to 15 mg and continued it for 14 days following the miscarriage. The clinical team referred the patient to the Department of General, Transplant, and Liver Surgery, where specialists diagnosed her with liver cirrhosis, portal hypertension, and hypersplenism with thrombocytopenia. We performed a gastroscopy, which revealed massive esophageal and gastric varices. We performed esophageal variceal band ligation and initiated propranolol therapy.

In light of the obvious risk to her health and life, future pregnancy plans were strongly discouraged. Over the following two years, the patient experienced two biochemical pregnancies. She and her partner decided to undergo karyotype analysis, which revealed no chromosomal abnormalities. During a routine hepatological follow-up, we calculated her Model for End-Stage Liver Disease (MELD) score to be 12, indicating that the patient did not yet require a liver transplant. At the same time, we diagnosed her with arterial hypertension and started her on metoprolol. In the spring of 2025, we performed an esophageal varices band ligation.

The patient presented six months later at the Chronic Diseases Outpatient Clinic of the Department of Obstetrics and Perinatology in the sixth week of her sixth pregnancy. We continued her on prednisone 12.5 mg and metoprolol 25 mg. We initiated progesterone therapy due to her history of recurrent pregnancy loss. At 12 weeks of gestation, prenatal ultrasonography revealed nasal bone hypoplasia. In addition, biophysical parameters such as the pulsatility index of the uterine artery and mean arterial blood pressure, as well as biochemical parameters such as Pregnancy-Associated Plasma Protein A (PAPP-A) and free beta-hCG, revealed a significantly increased risk for PE, with a probability of 1 in 14, and for FGR before 37 weeks of gestation, with a probability of 1 in 70. Consequently, we prescribed prophylactic treatment with ASA 150 mg. Non-invasive prenatal tests revealed a low risk for aneuploidy.

We hospitalized the patient due to increasing fluid accumulation in the abdomen and severe liver disease. Her pregnancy status is 17 weeks, and she has decompensated liver cirrhosis, splenomegaly (177 mm in the longest view), ascites (fluid in the abdomen, requiring drainage, 50 mm in thickness in the flank area), and perihepatitis (fluid around the liver, 40 mm in thickness). Lab results showed low albumin at 3.19 g/dL. The patient had clotting issues, with an APTT of 45.5 seconds and an INR of 1.21. Bilirubin reached 1.38 mg/dL, while the platelet count dropped to 58,000/μL. Clinical status improved as the ascites decreased. By the 18th week of pregnancy, an ultrasound revealed shortened long bones. Fetal weight at that time was in the 29th percentile.

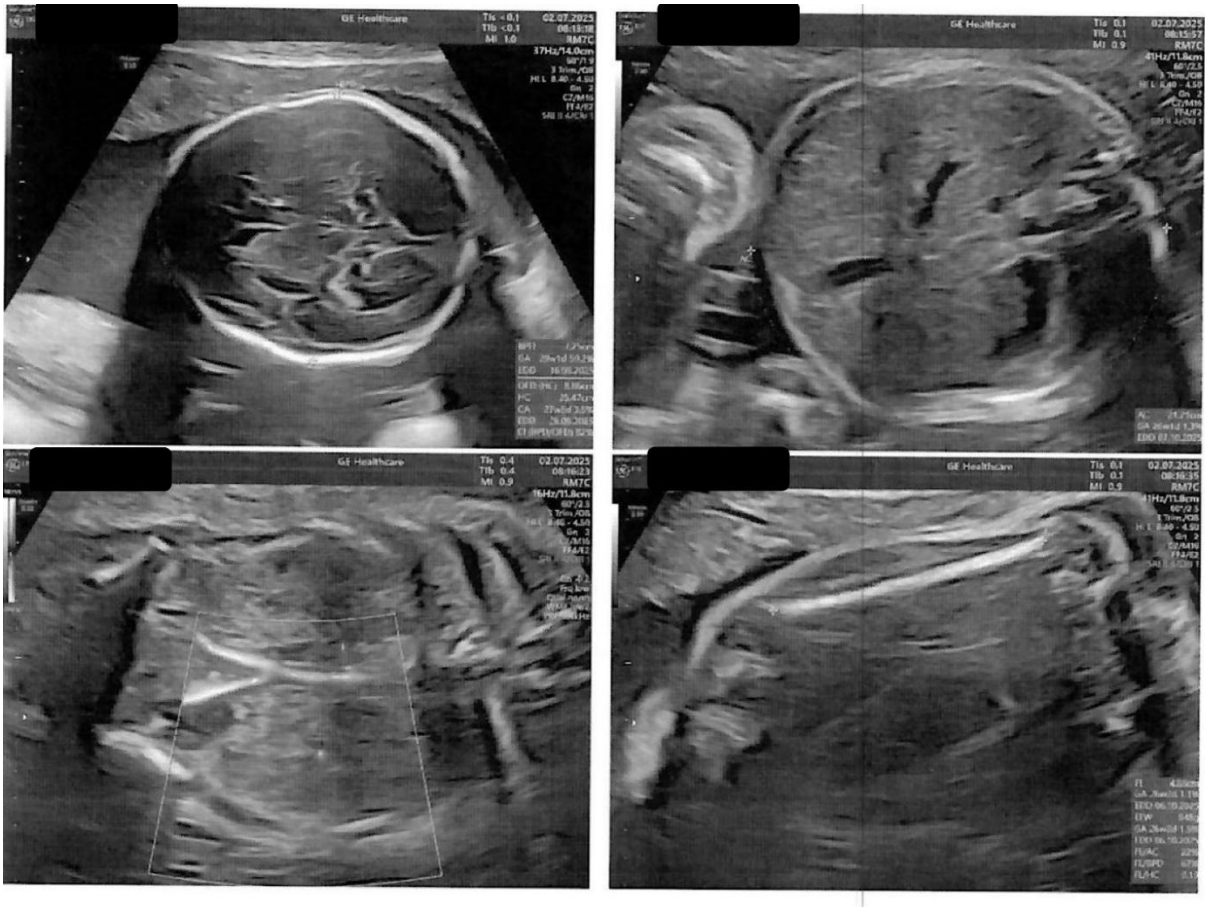

Figure 1. Obstetric ultrasonography showing a fetus with features of fetal growth restriction (FGR).

The patient is in her 23rd week of gestation and is diagnosed with vasa previa, defined as fetal membranes covering the internal cervical os, in combination with a low-lying placenta.

A third-trimester ultrasound was carried out on the patient in her 28th week of gestation and revealed stage I FGR, with an estimated fetal weight of 947g (5.1st percentile). She also presented with mild intrahepatic cholestasis of pregnancy at that time.

Given the data, we admitted the patient to the maternal-fetal medicine ward and administered prenatal steroids to accelerate fetal lung maturation.

Due to the deterioration of the patient's condition (increasing ascites, edema, and elevation of liver enzymes), burdened obstetric history, FGR, vasa previa, and cholestasis (Figure 1 and 2). We qualified the patient for an elective cesarean section at 30 weeks and 6 days of gestation.

The albumin-bilirubin score (ALBI score) was -2.03 (albumin 3.38 g/dL, total bilirubin 1.33 mg/dL), and Grade II hepatic dysfunction was present. We administered 2 g of fibrinogen and 1 unit of cryoprecipitate before surgery to assist with bleeding control. Due to the low platelet count (49,000/μL), we utilized general anesthesia for the procedure. During the laparotomy, we aspirated 1000 mL of clear transudate fluid. We delivered a live premature infant girl weighing 1200 g (15th percentile) with Apgar scores of 5, 6, and 7. The infant developed Grade II Respiratory Distress Syndrome and received surfactant therapy.

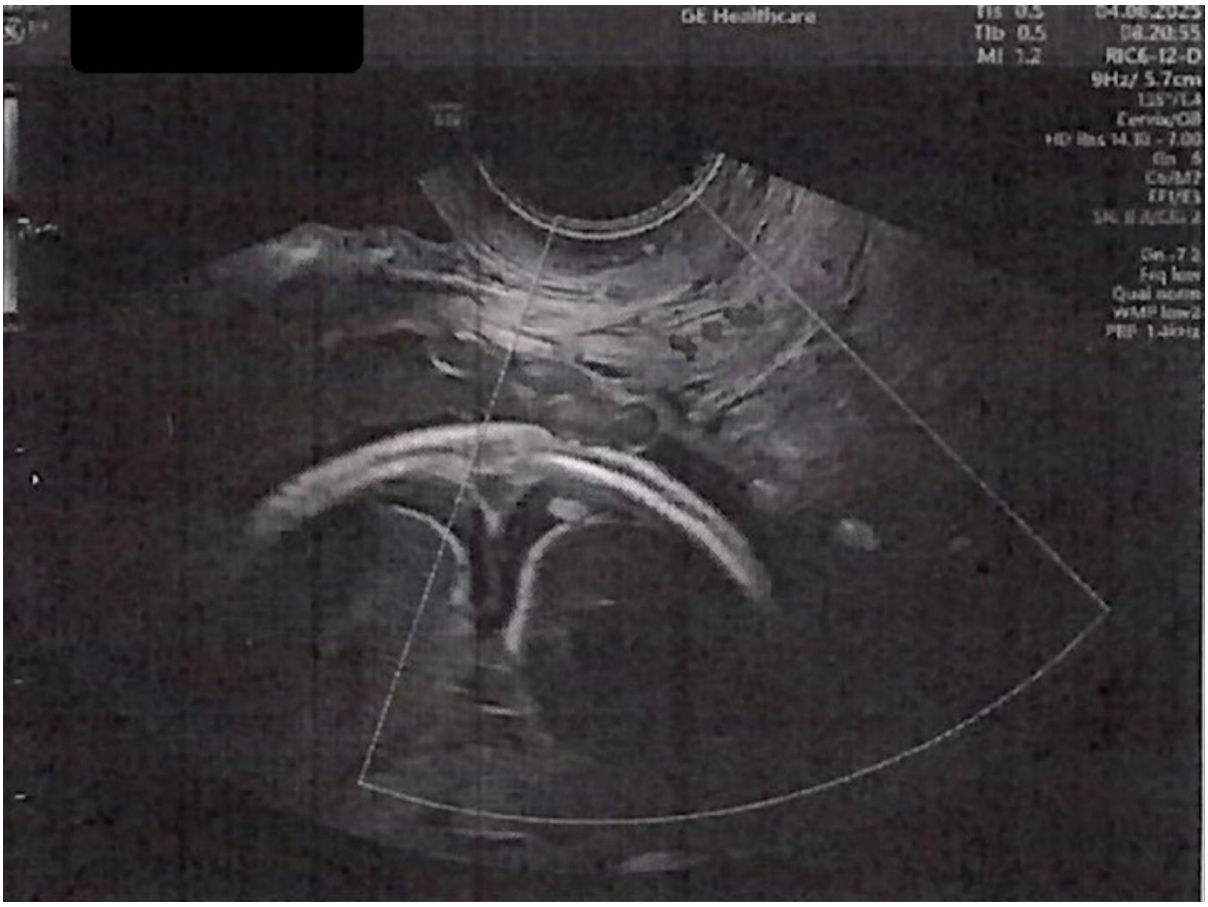

Figure 2. Transvaginal ultrasound image showing vasa previa, with fetal blood vessels crossing the internal cervical os.

The patient experienced postpartum hemorrhage (PPH) due to uterine atony and coagulopathy. Estimated blood loss was 1800 mL. Placental tissue was also present. We performed an instrumental removal of the placenta. We adopted a multimodal approach to control the hemorrhage. The clinical team administered medicinal agents (carbetocin, tranexamic acid, methylergometrine, and misoprostol), surgical procedures (the use of hemostatic sutures on the anterior and posterior uterine walls), mechanical interventions (the insertion of a balloon tamponade), and substitutional therapy (the administration of 2 units of packed red blood cells, 1 unit of platelets, and 2g of fibrinogen and prothrombin complex). During the puerperium, the patient's laboratory parameters deteriorated. A decrease in the patient's platelet levels to 42,000/μL indicated this clinical deterioration.

At 6 weeks postpartum, the patient required rehospitalization due to excessive accumulation and leakage of transudative fluid from the surgical wound.

During hospitalization, we conducted numerous surgical and internal medicine consultations. We increased the prednisone dose from 12.5 mg to 17.5 mg. Suspecting communication between the peritoneal cavity and the subcutaneous tissue, we qualified the patient for a relaparotomy. During the procedure, we evacuated 200 mL of fluid, resutured the surgical wound, and placed a Redon drain. After a few days, the patient was discharged from the clinic in a stable general condition, continuing to exclusively breastfeed the neonate. The newborn was discharged home at 50 days of life with a birth weight of 2,575 g. The patient continues her hepatology follow-up; a few months after delivery, we calculated her MELD score to be 15.

3. DISCUSSION

As advanced liver disease often triggers secondary amenorrhea and infertility, medical advances in AIH treatment now drive an increase in pregnancy rates. Unfortunately, these cases also carry a high degree of risk. A systematic review with meta-analysis on 2,912 pregnancies in women with liver diseases presenting with cirrhosis found that the maternal mortality rate was 0.89%, mostly due to esophageal varices and hemorrhage. Apart from maternal mortality, cirrhosis is also associated with other maternal morbidities like an increased risk of anemia, induction of labor, cesarean delivery, postpartum hemorrhage, increased postpartum infections, cholestasis,

pulmonary embolism, and placental abruption. The fetal morbidities included miscarriage, small-for-gestational-age babies, preterm delivery, distress in the newborn, and intrauterine growth restriction.

The present case is an example of a positive outcome in a pregnant woman with liver cirrhosis due to autoimmune hepatitis (AIH), presenting with intrauterine growth restriction, vasa previa, cholestasis, thrombocytopenia, preterm delivery, and postpartum hemorrhage. The history of the patient revealed multiple miscarriages in her previous pregnancies, one of which was complicated by placental abruption with hemorrhagic shock at 19 weeks of gestation. The clinical risks were considerable. Multidisciplinary planning secured a live birth. Liver cirrhosis makes pregnancy dangerous. But this case proves a key point. Women with advanced liver disease can safely become mothers. Medical teams must remain on high alert for emergencies.

Managing the elaborate dynamics between advanced liver disease and obstetrical risks requires a highly individualized approach. In the current case, given the patient's heavily burdened obstetric history of recurrent pregnancy loss, we initiated progestogen therapy in the early stages of pregnancy. Apart from its established role in the prevention of miscarriage, progesterone plays a critical immunomodulatory role in autoimmune hypophysitis (AIH), facilitating the differentiation of T helper 0 cells into T helper 2 cells and inducing Tregs, thereby creating an anti-inflammatory context conducive to pregnancy (Robinson & Klein, 2012).

In addition, the precise ultrasound screening conducted during the first trimester revealed an exceptionally high risk of PE at 1 in 14 and FGR. The clinical team-initiated ASA prophylaxis at 150 mg. Treatment started during the 12th week of gestation. The literature indicates that it is essential to act quickly and in a team with various specialists, as many studies show that the risk of hypertension problems is more prevalent in AIH pregnancies. Consequently, they are at a great risk of suffering from preeclampsia (PE). The objective of ASA prophylaxis in AIH pregnancies is to reduce the incidence of PE and its sequelae, including indicated preterm births (Chung & Heneghan, 2022). Stage I FGR complicated the pregnancy, forcing us to deliver the baby at 30 weeks. The newborn then developed RDS.

The greatest threat to the life of a patient with liver cirrhosis is portal hypertension. The physiological increase in plasma volume during pregnancy (by approx. 30-50%) dramatically increases portal pressure, raising the risk of esophageal variceal rupture and decompensation in the form of ascites. In our case, recurrent ascites in the 17th week of gestation and classification as Grade II on the ALBI score indicated depleting liver reserves. Risk stratification is essential for pregnant patients with cirrhosis. In line with EASL recommendations, we must evaluate the individual risk of cirrhotic patients before they conceive using standard clinical scores. In line with these protocols, assessing the patient's risk profile relies heavily on standard clinical scoring systems. In accordance with recommendations from the American Association for the Study of Liver Diseases and the existing literature, a preconception MELD score> 10 has been recognized as an important predictor of liver decompensation in pregnancy. On the other hand, a MELD score <6 has been recognized as an important protective factor in pregnant women with cirrhosis, as recommended by Westbrook et al., (2010) and van der Slik et al., (2022). In addition, the ALBI score and aspartate aminotransferase-to-platelet ratio index (APRI) have been identified as useful prognostic indicators of pregnancy outcomes in patients with cirrhosis and chronic liver disease (CLD), as advocated by Nana et al., (2025), Westbrook et al., (2010), and Gonsalkorala et al., (2019). The patient, before her sixth pregnancy, was found to have a MELD score of 12, which is not indicative of a good outcome during pregnancy. During pregnancy, the ALBI score reflected mild hepatic impairment (Grade II). These levels persisted unchanged at 30 weeks and after delivery.

We face our principal challenge when we manage portal hypertension during CLD in pregnancy. We follow the guidelines from AASLD and FIGO. They suggest an endoscopic screening for varices within the year before a woman conceives. Sometimes we cannot perform this evaluation early. In those cases, we recommend a screening during the second trimester (Braga & Braga, 2016; Tan et al., 2022). If we find medium or large varices, we must start preventive treatment. The clinical team effectively stopped the severe bleeding.

Meeting these recommendations often creates a clinical dilemma. We generally consider both non-selective beta-blockers (NSBB) and endoscopic variceal ligation (EVL) to be safe interventions. NSBB therapy includes several disadvantages that cannot be ignored. We must also account for the fetal risks tied to cardioselective beta-blockers.

In the present case, the clinical team's initiative approach proved to be the difference-maker. The patient underwent a successful EVL procedure before conception. Such a procedure proved advantageous to the patient for two main reasons. First and foremost, the procedure eliminated the need for a second-trimester endoscopy procedure. More importantly, the elimination of the risk of variceal bleeding allowed the clinical team to stop the bisoprolol therapy during the second trimester. Such a preventive approach delivered the safe termination of the bisoprolol therapy without harming the health of the fetus. In the same vein, the procedure eliminated the risk of variceal bleeding, thereby protecting the patient's health.

Preconception counseling, conducted in a multidisciplinary setting, is extremely important for patients with AIH. In most facilities, however, close collaboration between the gastroenterologist/hepatologist and the obstetric team, with a solid understanding of current guidelines, is essential (Sarkar et al., 2021). Attention to reproductive planning is typically lacking in women with cirrhosis, based on the belief that pregnancy is improbable. Data from the study Gonsalkorala et al., (2019) demonstrated that women with mixed chronic liver disease who received preconception counseling (even from a single hepatologist) were more likely to achieve stable liver disease at conception. In addition to obstetric-neonatal risk stratification according to MELD scale, ALBI score, and APRI, and endoscopic assessment for esophageal varices, preconception counseling should include recommending folic acid intake for at least 3 months before the planned pregnancy, as well as modification of immunosuppressive therapy.

The favored medical management for AIH during pregnancy involves glucocorticoids at the lowest possible doses, alone or in combination with azathioprine (Candia et al., 2005). The use of glucocorticoids during pregnancy is considered safe. Although steroids cross the placenta, placental metabolism offsets a significant percentage (approximately 90%) of the maternal dose, hence protecting the fetus. It is important to note that the dosage of prednisone must be kept to less than 15 mg/day, and pulse therapy is used for severe symptoms. Prolonged use of these corticosteroids is known to have adverse effects on the mother, such as gestational diabetes, hypertension, and decreased fetal growth. Therefore, monitoring is necessary.

Azathioprine is classified as category D by the Food and Drug Administration. It is safe to use this drug in pregnant women. The drug is known to cross the placenta at 50-90% of the patient's blood levels. However, the fetal liver lacks the enzyme inosine monophosphate pyrophosphatase, which is necessary to activate the drug into its active form, 6-mercaptopurine. Although the drug is safe to use in pregnant women, rare cases of infections due to immunosuppression and blood disorders have been known to occur. These two drugs are safe to use while breastfeeding. Mycophenolate mofetil is strongly contraindicated for use as an immunosuppressant in pregnant women due to its teratogenic effects. In the patient described in the question, corticosteroids were used throughout the pregnancy.

The diagnosis of vasa previa indicates the need for operative delivery. In the presence of coagulopathy and hypersplenism, it is considered an indicator of anesthetic challenges (Nana et al., 2025). In the normal course of gestation, the physiological increase in circulating volume results in hemodilution, anemia, decreased albumin levels, and decreased platelet counts, all within the lower range of normal values. We perform a more intensive evaluation for pregnant women with severe thrombocytopenia to secure both the patient and the fetus. When pathological hypersplenism and liver disease coexist with pregnancy, substantial hemorrhagic risks challenge the success of the surgical intervention. For instance, a cesarean section may cause heavy bleeding due to varices located on the abdominal wall. Coagulopathy and thrombocytopenia increased the risk of heavy bleeding.

Portal hypertension also has a tendency to deteriorate progressively over time, and this is due to increased cardiac output and compression of the inferior vena cava by the fetus. Several clinical factors contributed to the choice of mode of delivery, including those presented by Chung and Heneghan (2022). However, in this particular case, the unique combination of maternal and fetal pathophysiology contributed to the choice of an elective cesarean section at 30 weeks of gestation.

The case study also supports the current literature on the relationship between maternal liver disease and placental blood flow and the findings of low levels of PAPP-A and ultrasound findings consistent with blood centralization in the fetus, indicative of chronic fetal hypoxia. In the context of AIH, various studies have reported conflicting results regarding impaired fetal growth. While a recent United States population study found no difference in FGR between AIH patients and controls, a Danish registry-based cohort study found a 3-fold increased risk of small-for-gestational-age outcomes in AIH patients. Regardless of FGR, AIH increases the risk of preterm birth. Doctors define this as any delivery occurring before 37 weeks of gestation. United States nationwide population-based studies and single-center studies have reported an average preterm birth rate of approximately 20%. Similarly, a population-based study conducted in Sweden reported an increased preterm birth rate of 13.5% in AIH patients. Patients diagnosed with cirrhosis rarely carry their pregnancy beyond 37 weeks. Their condition significantly reduces the chance of reaching full term.

Distinct from placental perfusion defects, the clinical course was additionally complicated by ICP. The presence of underlying autoimmune liver disease is a well-known predisposing factor. Pregnant women with compensated cirrhosis resulting from autoimmune liver diseases have a significantly increased risk of developing ICP compared to those suffering from non-alcoholic fatty liver diseases (NAFLD). The development of ICP adds a separate vector of fetal risk. Maternal bile acid levels over 100 μmol/L increase the risk of poor fetal outcomes (Chung & Heneghan, 2022). Although the development of FGR and ICP represents a separate pathophysiological process, the simultaneous occurrence of these two complications in the patient likely increased the risk profile.

Massive PPH in cirrhotic patients is due to underlying coagulation factor deficiencies, thrombocytopenia, and the high incidence of uterine atony. The clinical team anticipated potential risks before the cesarean delivery. We transfused 2 g of fibrinogen and 1 unit of cryoprecipitate prophylactically. The clinical team managed the PPH in accordance with standard obstetric protocols. We administered oxytocin, carbetocin, IV methylergometrine, rectal misoprostol, and tranexamic acid. We transfused PRBCs during the operation. To stop the bleeding, we used compression sutures and a balloon tamponade. We also resuscitated her aggressively with blood products. These steps worked and saved the patient from a hysterectomy.

Data on the progression of AIH during pregnancy are limited. However, according to the literature, 20% of AIH cases may experience a flare during pregnancy (Kothadia and Shah, 2023). The patient's presentation mirrored these clinical findings. The patient was admitted for exacerbation of ascites at 17 weeks of pregnancy and further deteriorating liver function at 30 weeks.

However, after delivery, a decrease in pregnancy hormones such as progesterone and estrogen triggers immune reconstitution and a shift toward a Th1-dominant, pro-inflammatory response, which most often leads to a flare of AIH. In this regard, loss of biochemical remission (LOBR) is highly likely after delivery, with reported frequencies ranging from 12% to 86% and a mean of 50%. Patients should receive close hepatology care during the 8-12 weeks postpartum. In the management of autoimmune hepatitis exacerbations, higher corticosteroid doses intensified the immunosuppression. However, it is important to note that breastfeeding is compatible with corticosteroid and thiopurine therapy (Chung & Heneghan, 2022).

In this case, the complication was a postpartum complication, characterized by the continuous leakage of transudate from the surgical wound. Few medical reports described the complication. The complication necessitated the relaparotomy, which was done six weeks postpartum. The condition improved after the dose of prednisone was increased to 17.5 mg. Ascites and hypoalbuminemia delayed the wound healing process (Omer et al., 2026).

Although our patient did not experience them, it is important to note that AIH pregnancies carry an elevated risk of other maternal complications, specifically gestational diabetes mellitus (GDM) and hypertensive disorders such as gestational hypertension, PE, eclampsia, and HELLP syndrome. Recent population studies from across the country have reinforced the increased risk profile associated with AIH pregnancies. Examining a large cohort of 935 AIH pregnancies, a USA study found that AIH patients experienced higher rates of GDM (17%) than those with other CLD aetiologies (9%) or non-CLD pregnancies (7%). Significantly, a Swedish study demonstrated that AIH increases the risk of GDM even in patients without immunosuppression, thereby excluding corticosteroids as a causative factor. Clinicians screened AIH patients for gestational diabetes throughout the pregnancy.

The study from the USA also found that hypertensive complications are increased in AIH pregnancies, occurring in 9% of pregnancies compared with 4% of both CLD and non-CLD pregnancies. Although registry data show some variability in preeclampsia risk, most clinicians identify patients with AIH as a high-risk group for hypertensive disorders of pregnancy. To reduce the risk of PE and associated complications, guidelines recommend prophylactic low-dose ASA (75–150 mg/day) from 12 to 16 weeks of gestation in AIH pregnancies. The administration of low-dose ASA in AIH pregnancies has a two-fold benefit, as it may reduce the risk of PE as well as the associated risks of preterm delivery, perinatal morbidity, and mortality (Chung & Heneghan, 2022).

4. CONCLUSION

Therefore, the successful outcome of the pregnancy is feasible in patients who have advanced liver cirrhosis and portal hypertension. However, preconception optimization of the patient's condition, including stratification and prophylactic esophageal variceal ligation, is mandatory. What was most important in the case was the collaboration of all medical specialists. Clinical care spanned pregnancy planning, prophylactic EBL, and PPH management. Of interest is that improving hemostasis and using active mechanical devices, such as the Bakri balloon, are effective in reducing mortality and maintaining fertility. Finally, clinicians and patients must plan the pregnancy in these complex situations. Careful planning helps avoid severe, potentially life-threatening complications.

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Authors' Contributions

The Abstract, keywords, and the overall integration of the case report text were written and prepared by Agata Knap and Maria Gołębiewska.

The Introduction was written by Agata Knap. The case presentation was prepared by Weronika Knap-Wielgus. Agata Knap and Weronika Knap-Wielgus wrote the Discussion. Conclusions were prepared by Maria Gołębiewska. Bronisława Pietrzak was responsible for referring to the paper during the writing process. Bronisława Pietrzak, Weronika Knap-Wielgus, Dorota Bomba- Opoń, and Mirosław Wielgoś conceived the idea for the review, supervised the project, provided critical revisions to the manuscript, and approved the final version. All authors read and approved the final manuscript.

Informed consent

The patient consented to the publication of the case. Written & Oral informed consent was obtained from individual participants included in the study.

Ethical approval

Not applicable. This article does not contain any studies with human participants or animals performed by any of the authors.

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Conflict of interest

The authors declare that they have no conflicts of interest, competing financial interests or personal relationships that could have influenced the work reported in this paper.

Data and materials availability

All data associated with this study will be available based on reasonable requests to the corresponding author.

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