Acta Gastroenterológica Latinoamericana
ISSN: 0300-9033
ISSN: 2429-1119
actasage@gmail.com
Sociedad Argentina de Gastroenterología
Argentina

Costaguta, Alejandro; Araujo, Walter; Plaza, Sergio; Candarle, Pablo; Albornoz, Soledad
Embarazo en una adolescente con cirrosis e hipertensión portal: prevención de la hemorragia por várices esofágicas
Acta Gastroenterológica Latinoamericana, vol. 50, no. 2, 2020, June, pp. 191-197
Sociedad Argentina de Gastroenterología
Argentina

Pregnancy in an adolescent girl with cirrhosis and portal hypertension: prevention of bleeding from esophageal varices

Alejandro Costaguta,[1] Walter Araujo,[1] Sergio Plaza,[2] Pablo Candarle,[1] Soledad Albornoz[3]

[1] *Servicio de Gastroenterología, Hepatología y Nutrición, Sanatorio de Niños. Rosario, Argentina.*
[2] *Servicio de Anestesia, Sanatorio de Niños. Rosario, Argentina.*
[3] *Servicio de Obstetricia, Maternidad Oroño. Rosario, Argentina.*

Acta Gastroenterol Latinoam 2020;50(2):230-236

Recibido: 29/01/2019 / Aceptado: 19/03/2019 / Publicado online: 29/06/2020

Summary

Pregnancy in patients with cirrhosis and portal hypertension is a high-risk scenario, both for the mother and the fetus. Among all possible complications, bleeding from esophageal varices is one of the most feared. Availability of current therapies can reduce that risk effectively, making primary prophylaxis an appealing option that should be considered. We describe the case of a pregnant adolescent with a previous history of portal hypertension due to hepatic cirrhosis in which endoscopic primary prophylaxis of bleeding esophageal varices was carried out, achieving a term pregnancy without complications.

Key words. *Portal hypertension, cirrhosis, pregnancy, esophageal varices, primary sclerosing cholangitis, ulcerative colitis.*

Introduction

Pregnancy is a special period in woman´s life, during which important hemodynamic changes take place, placing patients with previous history of portal hypertension (PH) at risk of severe complications, like hemorrhage from esophageal varices (EV). In these cases, there is no uniform consensus on the best management, and the medical team has to address the problem without clear guidelines, based on the scarce information published.[1, 2]

We report the case of an adolescent with PH due to liver cirrhosis presenting at three months of gestation in which successful endoscopic primary prophylaxis of bleeding from EV was carried out, giving rise to a term pregnancy with no complications.

Case report

A 19 years old patient came to consult during the third month of pregnancy. She had been diagnosed with sclerosing cholangitis associated with ulcerative colitis since the age of 4 in addition to cystinuria and hypothyroidism, for which she attended to scheduled appointments, in the setting of a compensated cirrhosis. She was on treatment with ursodeoxycholic acid, sulfasalazine, folic acid, potassium citrate, and vitamin supplements. As expected, her blood tests showed low values for leucocytes and platelets, whit elevated liver enzymes, but normal values for the rest

Correspondencia: *Alejandro Costaguta*
Alvear 863. Servicio de Gastroenterología, Hepatología y Nutrición.
Sanatorio de Niños. Rosario, Argentina
Tel.: (0341) 420-4400
Correo electrónico: alejandro.costaguta@gmail.com

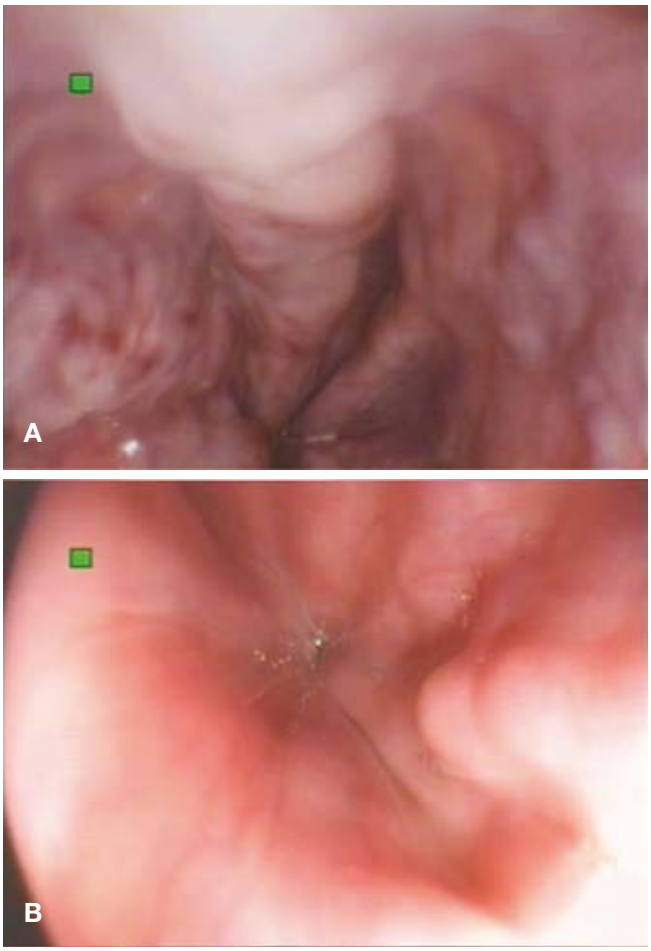
of determinations (Table 1). Liver ultrasound revealed a heterogeneous liver, splenomegaly, and a 5.6 mm lithiasis in the left kidney. Bone densitometry was within normal range (Z score: -1). Previous endoscopic controls up to 2 years before her pregnancy revealed small EV without risks stigmata. An upper endoscopy performed at 4 months of gestation revealed high-risk varices represented by 3 big vessels with red spots, in the distal esophagus. Moderate portal hypertensive gastropathy and gastric varices in the lesser curve (GOV1) was also recorded. The patient was started on a primary prophylaxis regime, with 3 sessions of endoscopic variceal ligation and a last one with 1% polidocanol injection, achieving a significant reduction of variceal size and disappearing of red signs at the end of follow up (Figure 1). Procedures were done under specific anesthetic and obstetric control, with monitoring of fetal condition. No complications were observed.

Table 1. *Biochemical profile at first visit.*

Hematocrit (%)	32
Hemoglobin (g/%)	11
Leucocytes (/mm^3)	2,800
Platelets (/mm^3)	56,000
Total bilirubin (direct) (mg%)	0.6 (0.1)
AST (IU/L)	89 (NV = 32)
ALT (IU/L)	103 (NV = 31)
GGT (IU/L)	342 (NV = 32)
Alkaline phosphatase (IU/L)	1065 (NV =105)
INR	1.4

INR: Internacional Normalized Ratio.
NV: normal value.

Figure 1. A) *Endoscopic aspect of esophageal varices at first session.* ***B)*** *Endoscopic aspect at the end of treatment: small residual varices without red signs.*



At 38th week of gestation, a cesarean section was programmed giving birth to a healthy male newborn (Apgar 9/10) weighing 2,870 g which developed a transient tachypnea and unconjugated hyperbilirubinemia without any remarkable consequences, being discharged on the 6th postpartum day. The mother was also in excellent condition and discharged at day 3 of hospitalization.

Discussion

Pregnancy is considered an unusual event in cirrhotic women owing to the abnormalities of menstrual cycles, endocrine metabolism, and advanced age of most of them, with its negative impact on fertility.[1-3] However, this concept has been challenged in the last years as a result of the progress attained in the treatment of infertility and chronic liver diseases. This could make foresee a new scenario, with increasing frequency of pregnancy in cirrhotic women in the near future.[4] Current estimations have set this prevalence in 45 cirrhotic over 100,000 pregnancies.[5]

The two conditions, pregnancy and cirrhosis, interact and modify each other, potentially giving rise to severe complications either in the fetus (spontaneous abortion, prematurity, intrauterine growth retardation) or the mother (gastrointestinal bleeding, hepatic insufficiency, arterial hypertension, splenic artery aneurysm), among others.1, 6 Retrospective studies and case series

showed that almost half of these pregnancies suffered complications, with a maternal mortality rate between 2 to 10%.[3-5]

Gestation produces important changes expressed through a hyper dynamic circulatory state with increase in the splanchnic flow, determining that up to 2/3 of healthy pregnant women have a *"transient PH"*.[1] Those changes are the consequence of an increase in the plasmatic volume (which can rise 50%), the cardiac output (up to 40%) and a fall in the peripheral vascular resistance.[1] Increased intra-abdominal pressure as a consequence of the uterine growth is another factor worsening PH.[1] Altogether, in a woman with preexistent PH an increase in the risk of hemorrhage from EV is expected, particularly when cirrhosis is associated (RR 400 times higher according to some estimations).[7-9]

EV-associated hemorrhagic morbidity (and mortality) could be reduced adopting a strategy of prevention of first bleeding (primary prophylaxis). Even in the absence of controlled trials assessing the efficacy of different therapeutic methods in pregnant women with PH, endoscopic variceal ligation has proven to be safe and effective in other scenarios.[9, 10]

Use of non-selective beta-blockers (propranolol) could be an option, but the associated reduction of splanchnic flow that ensues could be detrimental to the uterine circulation, with risk of hypoglycemia, bradycardia, and intrauterine growth retardation for the fetus.[2]

Although it is true that the risk of bleeding from EV, even when probably high, is mainly unknown, to intervene when bleeding occurs might confront the mother and fetus with undesirable consequences, and limitations in the therapeutic armamentarium. In fact, vasopressin should be avoided owing to its stimulating effect on the uterine muscle, and octreotide (FDA class B) produces an intense splanchnic vasoconstriction potentially harmful to fetal circulation.[2]

Other, more aggressive methods, like endovascular procedures (TIPS) or emergency surgical shunts, are reserved for extreme conditions and are associated with a high rate of potential complications, including encephalopathy.[4]

Endoscopic procedures are safe during pregnancy, provided they are postponed to the second trimester, and special measures for maternal and fetal safety are adopted. Excessive sedation could produce hypotension and hypoxia, and a supine position of the mother could make the gravid uterus compressing the inferior vena cava with reduction of uterine blood flow and fetal suffering. For this reason, left lateral decubitus of the mother has been recommended during the endoscopy. The use of benzodiazepines (FDA class D) is not recommended. Meperidine or propofol are the sedative drugs preferred.[2, 11] Sevoflurane would also be a safe option.[12]

Keeping in mind all the above considerations, we decided to initiate primary prophylaxis of variceal bleeding with endoscopic band ligation, in view of its best risk/benefit ratio in our patient. One session of sclerotherapy was performed at the end, when the small size of varices remnant made ligation technically impossible.

Choosing the mode of delivery is another controversial issue.[1-3] In our case, we decided to perform a cesarean section considering the risk of collateral bleeding during vaginal delivery because of the Valsalva maneuver. The availability of an experienced surgeon with expertise in PH is desirable during the labor. This was accomplished in our case.

Conclusion

Pregnancy in patients suffering from PH, especially in the context of cirrhosis is a high-risk event for the mother and the fetus and should be controlled in experienced centers with resources to address the complications that could arise.

There is scarce information to help the physician in addressing the many faces of this complex situation, either in the management of PH or the type of delivery. This should be tailored to each specific case and managed in the context of a multidisciplinary team.

In our case, endoscopic-based primary prophylaxis of variceal bleeding, together with a programmed cesarean delivery resulted in a favorable outcome, without complications for the mother and the offspring.

Conflict of interest. *None to declare.*

Acknowledgements*. The authors wish to thank Dr. Silvina Balbarrey and Dr. Luis Sabbatini for actively participating in the care of the patient.*

References

- On page 194.