

Refractory Hyperemesis Gravidarum with PICC Line-Associated Fungemia: A Management Challenge

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INTRODUCTION

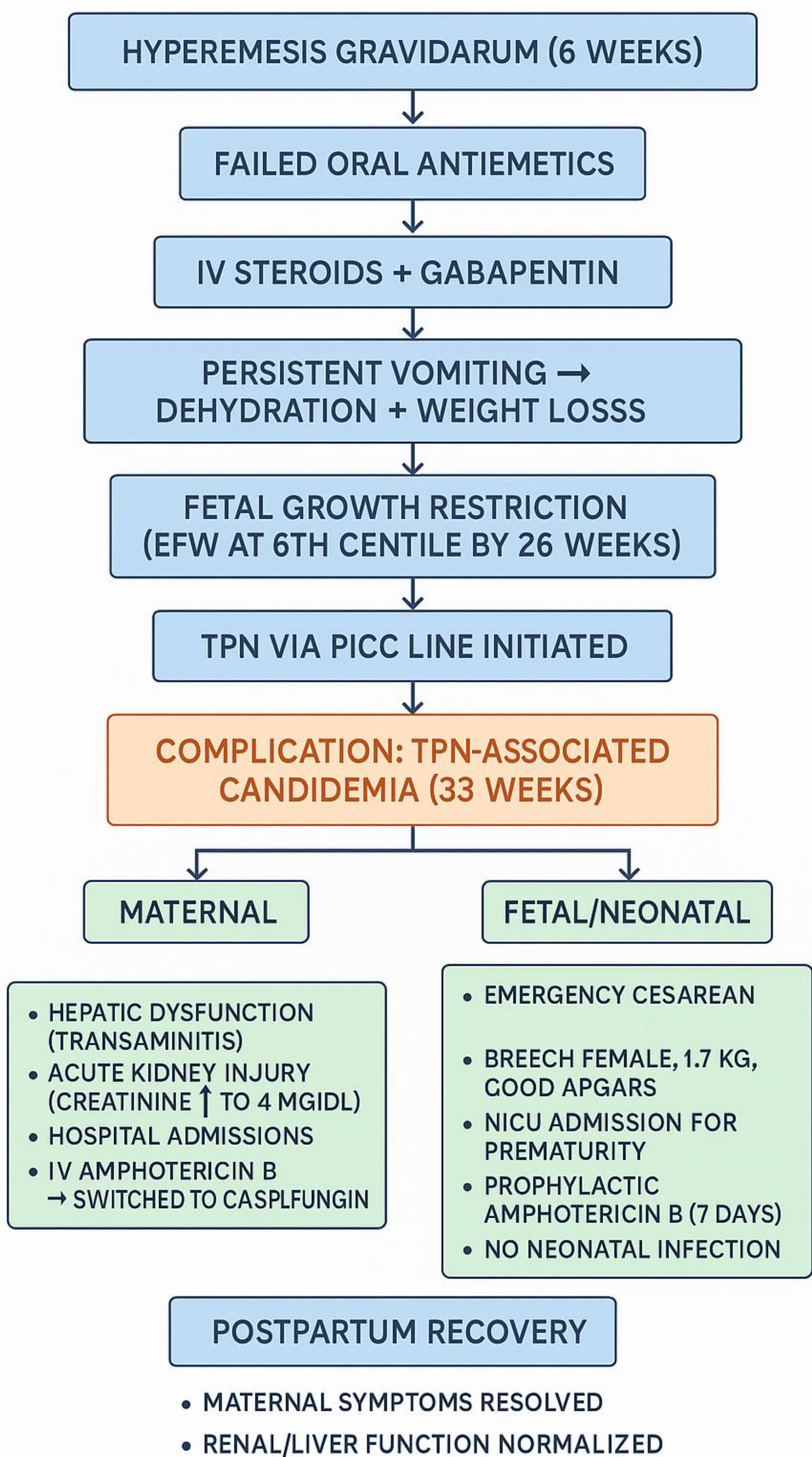
Hyperemesis gravidarum (HG) is a severe form of nausea and vomiting in pregnancy, leading to maternal and fetal morbidity. Refractory cases requiring parenteral nutrition increase the risk of complications, including catheter-associated infections. This case highlights a patient with steroid-resistant HG who developed PICC line-associated fungemia while on total parenteral nutrition (TPN).

CASE PRESENTATION

A 28-year-old woman, gravida 2 para 1+0, presented at six weeks of gestation for routine antenatal booking. She complained of severe nausea and persistent vomiting, consistent with hyperemesis gravidarum. Her symptoms were unrelieved by dietary modifications and significantly impacted her oral intake, leading to early dehydration and weight loss.

Initial pharmacological management included oral antihistamines, ondansetron, and metoclopramide. Despite this regimen, her symptoms persisted and required escalation to intravenous hydrocortisone 100 mg twice daily. To further investigate the severity of her gastrointestinal symptoms, an upper gastrointestinal endoscopy was performed, which revealed a relaxed lower esophageal sphincter. This prompted the addition of gabapentin to her treatment plan.

Despite maximal medical therapy, the patient experienced ongoing severe vomiting that led to repeated episodes of dehydration, electrolyte imbalances, and progressive weight loss. Serial ultrasound assessments indicated suboptimal fetal growth, with the estimated fetal weight falling to the 6th centile by 26 weeks' gestation, suggesting early fetal growth restriction (FGR).



Graphical summary of events and complications of the case

CASE PRESENTATION

Due to worsening maternal nutrition and fetal growth restriction, TPN was initiated via a PICC line (1600 kcal/day, 2–3 times/week), leading to maternal weight stabilization and improved fetal biometry. She required multiple hospitalizations and was managed by a multidisciplinary team, with LMWH and low-dose aspirin for prophylaxis. The PICC line was closely monitored and TPN adjusted as needed. At 33 weeks, she developed PICC line -associated candidemia (*Candida albicans*). The PICC line was removed, and IV Amphotericin B started, but it caused deranged liver function tests (Transaminase 273) and acute kidney injury (creatinine 2.4 mg/dL), prompting a switch to IV Caspofungin.

With worsening maternal labs and fetal risk, an emergency C-section was performed at 33+2 weeks, delivering a 1.7 kg breech female with good Apgars. The neonate was admitted to NICU for prematurity and infection monitoring.

Postpartum, the mother improved on Caspofungin, and her symptoms resolved. The neonate received 7 days of prophylactic Amphotericin B; all cultures remained negative. Both were discharged in stable condition.

LITERATURE REVIEW

Hyperemesis gravidarum (HG) is a severe and potentially debilitating form of nausea and vomiting in pregnancy, affecting approximately 0.3–2% of pregnancies worldwide. It is characterized by intractable vomiting, dehydration, electrolyte imbalance, weight loss exceeding 5% of pre-pregnancy body weight, and ketonuria.

LITERATURE REVIEW

Although most cases of HG respond to antiemetics, corticosteroids, and hydration, refractory cases, defined as those unresponsive to standard therapy, present a significant management challenge. Persistent vomiting can result in maternal malnutrition, electrolyte imbalances, and fetal growth restriction (FGR), as seen in this case. Studies report that up to 18% of HG cases may require hospitalization, and a small subset requires advanced nutritional support, including enteral or parenteral nutrition.

Although effective in preventing maternal catabolism and supporting fetal growth, TPN carries considerable risks, including line-related infections, sepsis, thrombosis, and metabolic disturbances. It is reported that up to 25% of pregnant patients receiving TPN developed central line infections, with fungal pathogens accounting for a significant proportion. Candidemia during pregnancy poses risks to both mother and fetus. Management includes immediate catheter removal, systemic antifungal therapy, and maternal-fetal monitoring. Amphotericin B is generally preferred in pregnancy due to its long-standing use and limited placental transfer, although it may cause nephrotoxicity and hepatotoxicity, as seen in this patient. Echinocandins, such as Caspofungin, are considered second-line agents due to limited safety data in pregnancy but may be justified in cases of organ dysfunction.

Conclusion

This case underscores the importance of a multidisciplinary team approach, including obstetrics, maternal-fetal medicine, infectious disease, and nutrition support teams. Clinical decisions, such as timing of delivery, must weigh maternal deterioration against fetal viability. In the presence of worsening maternal biochemistry due to systemic infection or medication toxicity, early delivery may be necessary, even preterm, to preserve maternal health.

References:

1. B. Martinez de Tejada, L. Vonzun, D.U. Von Mandach, A. Burch, M. Yaron, M. Hodel, D Surbek, I. Hoesli, Nausea and vomiting of pregnancy, hyperemesis gravidarum, European Journal of Obstetrics & Gynecology and Reproductive Biology, 10.1016/j.ejogrb.2024.11.006, **304**, (115-120), (2025).
2. Mullin PM, Ching C, Schoenberg FP, MacGibbon K, Romero R, Goodwin TM. Risk factors, treatments, and outcomes associated with prolonged hyperemesis gravidarum. *J Matern Fetal Neonatal Med.* 2012;25(6):632–636.
3. Romolo Di Iorio, Paola Bianchi, Elena Casolati, Elena Piccolo, Mario Mangrella, Assessing the approaches to nausea and vomiting in pregnancy: insights from a nationwide survey of Italian gynecologists (PURITY light), Frontiers in Medicine, 10.3389/fmed.2025.1462860, **12**, (2025).
4. Pappas PG, Kauffman CA, Andes DR, et al. Clinical practice guideline for the management of candidiasis: 2016 update by the Infectious Diseases Society of America. *Clin Infect Dis.* 2016;62(4):e1–e50.
5. Committee on Practice Bulletins-Obstetrics. ACOG Practice Bulletin No. 189: Nausea And Vomiting Of Pregnancy. *Obstet Gynecol.* 2018 Jan;131(1):e15–e30