

Veno-Arterial ECMO for Cardiac Arrest and Severe Hypoxia from Pulmonary Edema Associated with Massive Transfusion in a Case of Necrotizing Chorioamnionitis

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Background - Chorioamnionitis

- Infection of the intra-amniotic space causing inflammation of the membranes and chorion of the placenta
- Usually caused by ascending polymicrobial bacterial infection following rupture of membranes
- Occurs in 1-4% of all US births
- Risk factors include long duration of membrane rupture, prolonged labor, nulliparity, African American ethnicity, multiple vaginal exams, smoking, alcohol or drug abuse, immune-compromised states, and epidural anesthesia
- Can precipitate uterine atony and lead to systemic infection, which is a risk factor for pulmonary edema
- **We present a case of severe necrotizing chorioamnionitis, refractory postpartum hemorrhage, cardiac arrest, and multisystem organ failure requiring extracorporeal life support, highlighting coordinated multidisciplinary resuscitation**

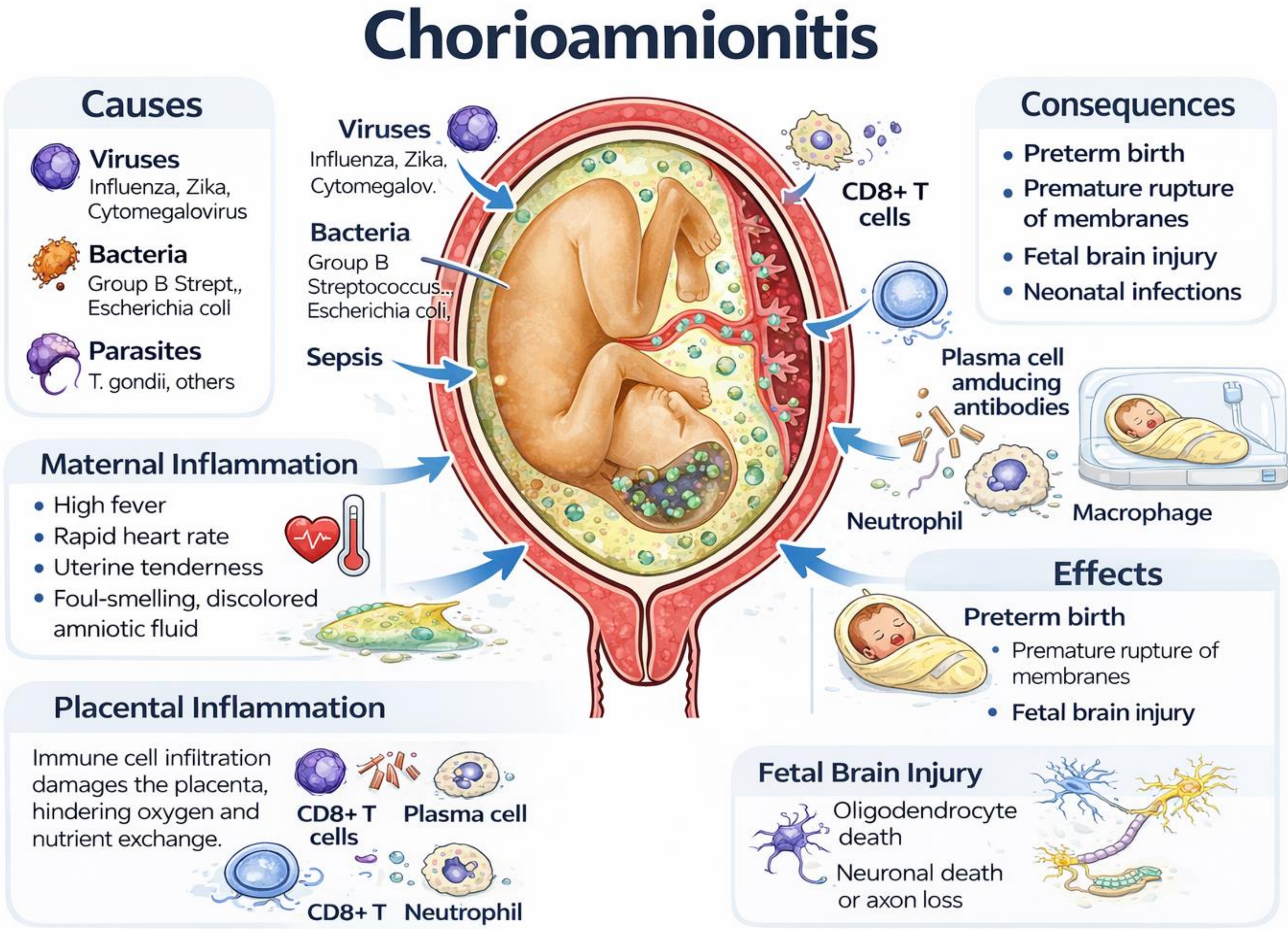


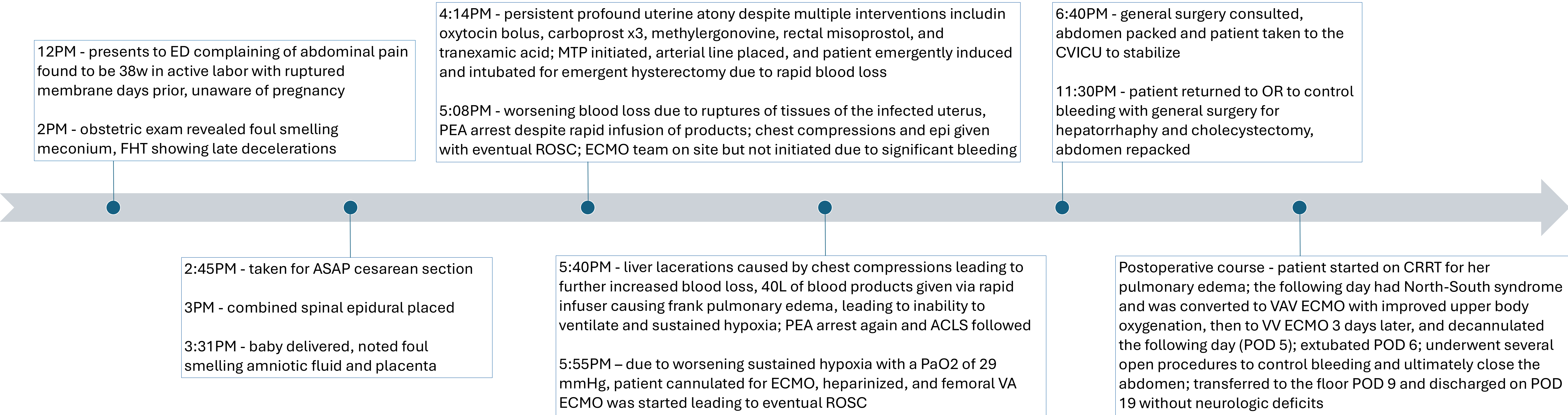
Figure 1: Causes, pathophysiology, and consequences of chorioamnionitis, adapted from below source

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Case Presentation

21-year-old G3P1A1 with a history of a prior cesarean delivery presented at 38w in active labor with ruptured membrane days prior, unaware of her pregnancy



Placental pathology showed severe necrotizing chorioamnionitis with visible clusters of cocci, swab of the uterus grew Streptococcus GBS, mitis, and anginosus

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Discussion

- This case illustrates fulminant hemorrhage secondary to chorioamnionitis and breakdown of infected uterus tissue
- Multiple transfusions aimed at correcting hypovolemia are associated with transfusion related acute lung injury (TRALI) and pulmonary edema
- ECMO may be the only option to treat severe hypoxia, but heparinization in the presence of ongoing coagulopathy and unrepaired liver lacerations was controversial
- Ultimately, use of ECMO was the correct measure to prevent immediate death and long-term neurologic injury in this patient
- This case underscores the complexity of decision-making processes and highlights the use of in-OR ECMO in managing women with severe hemorrhage, cardiopulmonary failure, and ongoing coagulopathy and organ injury.

