

## Non-Traumatic Management of Interlocked Twins with Intrauterine Fetal Demise: Lessons Learned

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### Abstract

**Introduction:** Twin pregnancy is associated with increased obstetric risks, including preterm labor, fetal growth restriction, and higher operative delivery rates. Among these, locked twins represent a rare but life-threatening complication, occurring in approximately 1 in 1,000 twin pregnancies. This condition arises when the heads of the twin interlock, often in breech and cephalic presentations, causing mechanical labor obstruction. We present a case of chin-to-chin locked twins that occurred at the gestational age of 33 weeks plus 5 days.

**Case Summary:** A 20-year-old primigravida mother presented with a history of ten hours of leakage of fluid per vagina and nine hours of pushing down pain at the gestational age of 33 weeks plus 5 days. With a diagnosis of the chin-to-chin interlocked twin pregnancy and intrauterine fetal death, craniotomy was done for the second twin delivery to enable smooth vaginal delivery without the need for episiotomy or vaginal tear repair.

**Conclusion:** Management of locked twins with IUFD requires decisive actions to protect maternal health, and destructive procedures like craniotomy remain essential interventions in such cases.

**Keywords:** Locked Twins; Intrauterine Fetal Death; Craniotomy

### Abbreviations

ANC: Attended Four Antenatal Care; ALT: Alanine Aminotransferase; AST: Aspartate Aminotransferase; CR: Creatinine; HCT: Hematocrit; HGB: Hemoglobin; IUFD: Intrauterine Fetal Demise; PLT: Platelets; WBC: White Blood Cell Count

### Introduction

Twin pregnancy is associated with a heightened risk of obstetric complications, including preterm labor, fetal growth restriction, and higher rates of operative deliveries. Among these complications, locked twins represent a rare but life-threatening obstetric emergency, which typically occurs when the heads of the twins become interlocked during labor, often in breech and cephalic presentations. The incidence of interlocking twins is estimated to be approximately 1 in 1,000 twin pregnancies, and the condition carries significant risks for both maternal and fetal morbidity and mortality [1,2].

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Fetal interlocking occurs when the presenting twin's head becomes engaged and prevents the descent of the second twin, leading to a mechanical obstruction of labor. This phenomenon is more commonly encountered in cases of twin gestation where the presenting fetus is in the breech position and the second fetus is in a cephalic presentation. The complexity and severity of this obstetric emergency require meticulous management, often necessitating advanced obstetric maneuvers or surgical intervention, such as craniotomy in cases of intrauterine fetal demise [3].

The management of locked twins presents a dilemma, especially when it involves intrauterine fetal demise. Vaginal delivery, although challenging, can be achieved with the use of specific maneuvers or procedures to release the fetal heads. In instances where vaginal delivery is not feasible, surgical interventions, including craniotomy, may be necessary to ensure maternal safety. Historical case reports and evidence from clinical practice have highlighted various management strategies, emphasizing the importance of individualized care based on maternal and fetal conditions [4,5].

### Observation

Here we are presenting a case of a 20-year-old primigravida presented at a gestation age of 33 weeks and 5 days with interlocked twins on referral paper. She was referred from a local health center with a diagnosis of preterm labor, breech presentation, twin pregnancy, and preeclampsia with severity features. She reported a history of ten hours of leakage of fluid per vagina and nine hours of pushing down pain upon arriving at the health center. The first twin had partially delivered to the level of the umbilicus en route to the health center. She denied any history of foul-smelling vaginal discharge, vaginal bleeding, or chronic medical illnesses. She had attended four antenatal care (ANC) visits at the same health center.

On physical examination, the patient was in labor with a blood pressure of 170/110 mmHg, pulse rate of 80 beats per minute, respiratory rate of 20 breaths per minute, and a temperature of afebrile to touch. She was well-appearing, with pink conjunctiva and non-icteric sclera.

The uterus was estimated at 32 weeks in size, with a longitudinal lie. Fetal heartbeats were absent for both twins. There was no abdominal tenderness or scar, and contractions were 2 in 10 minutes, lasting 20-25 seconds.

The cervix was fully dilated. Twin A had delivered up to the shoulder level, with a non-pulsatile cord present. The head of Twin B was palpable in the posterior vagina, positioned at station +2, interlocked with the head of Twin A chin to chin.

The patient had grade two bilateral pitting edema.

With the above findings, a diagnosis of interlocked twins with intrauterine fetal demise (IUFD), early preterm labor, and preeclampsia with severity features was made. Magnesium sulfate was administered for seizure prophylaxis: a 20% loading dose of 4g intravenously over five minutes, followed by a 10g intramuscular dose (5g in each buttock) with 2% lidocaine.

She was investigated with laboratory results indicating white blood cell count (WBC) at 14,000, hematocrit (HCT) at 53.4%, hemoglobin (HGB) at 17.7 g/dL, and platelets (PLT) at 250,000. Blood group/Rh was A positive, urinalysis showed +2 protein, aspartate aminotransferase (AST) was 58.7 U/L, alanine aminotransferase (ALT) was 27.8 U/L, and creatinine (CR) was 1.09 mg/dL.

After confirmation of absent fetal heartbeats for Twin B with ultrasound, the patient was counseled, and informed consent was obtained for a destructive delivery to facilitate vaginal birth. Craniotomy was performed on Twin B, a female fetus weighing 2500g with partial brain tissue, to enable smooth vaginal delivery without the need for episiotomy or vaginal tear repair. Twin A, a 1500g male, was subsequently delivered, and both were confirmed as fresh stillbirths.

The placentas were delivered via controlled cord traction after administration of 10 IU intramuscular oxytocin, followed by an oxytocin drip (40 IU in 1L normal saline) at 80 drops/minute. The mother was monitored for vaginal bleeding, and magnesium sulfate maintenance doses were continued as per protocol. Blood pressure was managed, and once stable, the patient was discharged with instructions on postpartum care, follow-up visits, family planning, and future pregnancy planning.

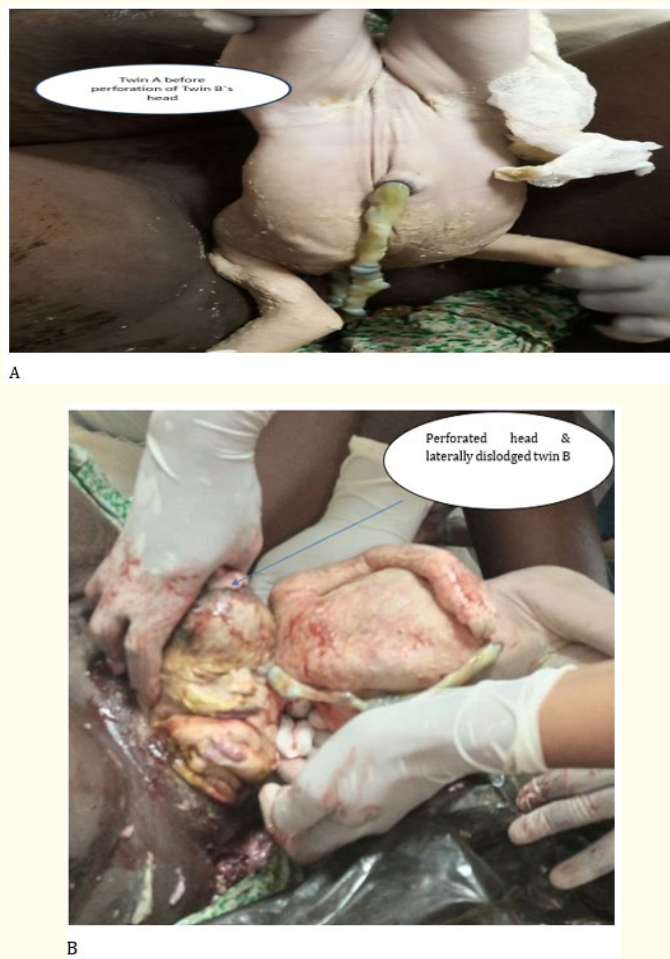


Figure 1: Figure of interlocked twin with twin A breech (A) and twin B cephalic (B).

### Discussion

Locked twin pregnancies, particularly those complicated by IUFD and maternal preeclampsia, are rare but critical obstetric emergencies that necessitate prompt, strategic management to ensure maternal safety [1]. In this case, the patient presented with classical signs of locked twins, such as obstructed labor with Twin A partially delivered and Twin B engaged in the posterior pelvis. Twin interlocking is a mechanical complication generally associated with one twin in a breech presentation and the other in a cephalic presentation, as was observed in this patient [2,3].

Given the intrauterine demise of both twins and the maternal hypertensive crisis, the intervention focused on minimizing maternal risks and ensuring the swiftest possible resolution of labor. Craniotomy was selected as the safest approach for the delivery of Twin B, which facilitated the subsequent delivery of Twin A without further complications. This intervention, while invasive, was necessary in light of IUFD and the need to prevent prolonged labor and associated complications [4,5].

This case underscores the importance of birth preparedness and complication readiness, especially for high-risk pregnancies. Guidelines recommend comprehensive antenatal care (ANC) counseling on danger signs and the need for timely intervention in cases of preterm labor, gush of fluid, or abnormal presentation [6]. Early recognition of danger signs and swift referral to appropriate facilities are vital, as exemplified by this patient's referral to a higher center.

### Conclusion

In conclusion, the management of locked twins with IUFD requires decisive actions to protect maternal health, and destructive procedures like craniotomy remain essential interventions in such cases. ANC providers should continue to educate pregnant women and their families on early warning signs to reduce delays in accessing timely obstetric care.

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### Conflict of Interest

No competing interests.

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