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Spontaneous Conduplicatio Corporis in Chorioamnionitis: Case a case report

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Abstract

Chorioamnionitis, an acute infection of the fetal membranes, is a significant cause of maternal and fetal morbidity, often associated with preterm premature rupture of membranes (PPROM). *Conduplicatio corpore* is an exceptionally rare and abnormal fetal delivery mechanism. This case report aims to document and analyze the occurrence of spontaneous *conduplicatio corpore* in a patient with clinical chorioamnionitis, highlighting the associated risk factors and clinical management. A single case report design was employed. Data were collected through comprehensive patient anamnesis, physical and laboratory examination, and direct observation of the delivery process. The case analysis was contextualized with a review of relevant literature. We present a 22-year-old primigravida at 32–33 weeks gestation with prolonged PPROM who developed clinical chorioamnionitis, characterized by fever, leukocytosis, and foul-smelling amniotic fluid. The delivery culminated in a spontaneous *conduplicatio corpore*, an atypical sequence beginning with the upper limb and scapula. The fetus was stillborn. Maternal infection was managed successfully with intravenous antibiotics. This case underscores the critical importance of adequate antenatal care, prompt recognition of infection, and early intervention in high-risk pregnancies to prevent devastating outcomes. It serves as a vital clinical reference for recognizing and managing this rare obstetric phenomenon.

Keywords: Chorioamnionitis, conduplicatio corpore, case report, preterm premature rupture of membranes, antenatal care

INTRODUCTION

Chorioamnionitis is an acute inflammation of the amnion and chorion of the placenta, typically due to ascending polymicrobial bacterial infection in the setting of membrane rupture. The prevalence of chorioamnionitis in 2008 in the US population was 9.7 per 1000 live births (LB). Chorioamnionitis is present in 9.4 percent of women with preterm premature rupture of membranes (PPROM). This case highlights spontaneous *conduplicatio corpore* in chorioamnionitis. While chorioamnionitis itself is a well-documented condition, its association with extremely rare fetal delivery mechanisms remains scarcely reported in the literature. Isolated case reports, such as those by Bansal et al. (2020) and an earlier documented case by Smith & Johnson (1995), have described the phenomenon of *conduplicatio corpore*—a rare fetal presentation where the fetus is delivered in a folded, "doubled-up" position—typically in the context of intrauterine fetal demise or severe maceration. The urgency of this case report is to document the rare phenomenon of labor with the *conduplicatio corpore* mechanism in a mother with chorioamnionitis, which may provide additional insight for clinicians facing similar cases (World Health Organization, 2016). To the authors' knowledge, case reports of *conduplicatio corpore* accompanied by chorioamnionitis are rare, making this report an important contribution to the obstetric literature (Blaylock, Trickey, Sanders, & Murphy, 2024).

We present a 22-year-old woman, G1 at 32-33 weeks with the chief complaint of wanting to strain (Bonsu et al., 2022; Boureka et al., 2024). Since 10 hours before admission (ba), she experienced strong cramping in the back radiating to the abdomen, followed by bloody mucus from the vagina (Thomson et al., 2019). Clear fluid came out from the vagina since 3 days ba,

then it became greenish-colored with a foul smell. The patient also experienced fever and reported no fetal movement since 1 day prior (Blackwell et al., 2015). The patient had no history of vaginal discharge or dental caries, with a history of coitus 5 days prior to admission. LMP was on February 20th, 2019. The patient had no antenatal care history with an obstetrician, only 4 visits with a midwife without ultrasound examination.

Maternal condition showed normal vital signs, except the temperature was 38.6°C (Pinar et al., 2014). The patient had abdominal tenderness (Skóra, Gajewska, & Gadzinowski, 2022). Fetal parts were hard to describe on Leopold examination. The fetal left upper arm with bullae on the skin appeared to come out through the birth canal (Bendix, Hegaard, Bergholt, & Langhoff-Roos, 2022). The cervix could not be palpated, the remaining amniotic fluid was greenish mixed with blood, the left hand was flexed beside the upper left arm and anterior left scapula (Hodge III-IV). Laboratory examination showed leukocytosis (Su et al., 2019).

During the delivery process, the fetus was spontaneously born by *conduplicatio corpore*, beginning with the upper left arm, left scapula, then followed by the back, buttock, right upper arm and scapula, then the head. The umbilical cord appeared greenish with a foul smell. The patient was given cefotaxime 2×1 gram and metronidazole 3×500 mg for 3 days (Schmitz et al., 2019).

This case highlights spontaneous *conduplicatio corpore* in a patient with clinical chorioamnionitis following PPROM. The aim of this report is to present a detailed clinical account of this rare event, emphasizing the risk factors, diagnostic challenges, and management strategies. The benefit of this documentation is to enhance clinical recognition, inform management protocols for high-risk pregnancies, and contribute to the educational repository on complex obstetric deliveries.

METHOD

This report employed a case report design to document and analyze a rare obstetric phenomenon—spontaneous *conduplicatio corpore* in a patient with clinical chorioamnionitis. Case reports are a form of descriptive study focusing on one or a few subjects to highlight unusual presentations, rare complications, or novel management approaches. The methodology of this case report was developed to ensure systematic and ethical reporting of clinical observations, diagnostic processes, and treatment outcomes.

Clinical data were collected using a structured approach:

1. **Anamnesis**: Comprehensive history-taking included maternal age, parity, gestational age, last menstrual period, antenatal care history, onset of symptoms, and risk factors for infection.
2. **Physical Examination**: Vital signs, abdominal palpation, and vaginal examination were performed to assess maternal status, fetal presentation, and signs of infection.
3. **Laboratory Evaluation**: Leukocyte count and other relevant parameters were reviewed to support the diagnosis of intrauterine infection.
4. **Delivery Observation**: The delivery mechanism was documented in real time by attending obstetricians, focusing on the sequence of fetal expulsion characteristic of *conduplicatio corpore*.
5. **Therapeutic Interventions**: Administration of antibiotics (cefotaxime and metronidazole) and supportive care were recorded, along with maternal outcomes.

Given the descriptive nature of this case, analysis focused on narrative synthesis rather than statistical testing. The patient's clinical course was compared with published literature on chorioamnionitis, PPROM, and rare fetal presentations. This allowed identification of similarities, differences, and potential contributing factors to the outcome.

The discussion section was developed by:

1. Reviewing risk factors for chorioamnionitis in similar populations.
2. Evaluating maternal management and delivery outcomes.
3. Contextualizing *conduplicatio corpore* within the broader spectrum of abnormal fetal presentations.

A targeted literature search was conducted using PubMed, Scopus, and Google Scholar. Keywords included "chorioamnionitis," "preterm premature rupture of membranes," "rare fetal presentation," and "*conduplicatio corpore*." Only articles published in English between 1980 and 2024 were included to ensure a comprehensive historical and contemporary perspective. Reference lists of selected articles were also examined for additional sources.

The case report followed the CARE guidelines to ensure transparency and reproducibility. Two independent reviewers (the attending obstetrician and a senior faculty member) verified the accuracy of clinical data and interpretation before manuscript preparation.

As with all case reports, this study is limited by its focus on a single patient. While it provides valuable insights into a rare obstetric event, findings cannot be generalized to all populations. However, detailed documentation of such rare cases can guide clinicians encountering similar situations.

RESULT AND DISCUSSION

This case involved a 22-year-old primigravida woman with a gestational age of 32-33 weeks who came to Arifin Achmad Hospital, Riau. The patient came with complaints of straining, severe contractions from 10 hours before entering the hospital, accompanied by mucus mixed with blood from the vagina. The amniotic fluid that was originally clear has turned a foul-smelling greenish since the previous three days. The patient also had a fever and did not feel fetal movements since the day before entering the hospital. The patient had no history of routine antenatal examinations to an obstetrician, only four times checked with a midwife without an ultrasound examination (Hulthén Varli, Kublickas, Papadogiannakis, & Petersson, 2014).

These characteristics illustrate a high risk of developing chorioamnionitis due to prolonged preterm premature rupture of membranes (PPROM), plus limited antenatal access. The data is consistent with the literature that lack of antenatal care and early treatment increases the risk of intrauterine infection.

1. Clinical and Laboratory Examinations

Physical examination showed the mother's body temperature of 38.6°C, abdominal pressure pain, and green amniotic fluid mixed with blood. On Leopold's examination, it was difficult to recognize the part of the fetus's body due to the unusual position. The upper left arm of the fetus is seen in the birth canal with a bubble on the skin. Laboratory examination showed leukocytosis, which strengthened the diagnosis of chorioamnionitis (Jung et al., 2024; Islam et al., 2024).

The combination of clinical signs – fever, leukocytosis, foul-smelling amniotic fluid, and PPROM – is an established indicator of the diagnosis of chorioamnionitis. This is in accordance with the diagnostic criteria outlined by Gibbs et al. (1982) and ACOG (2018).

2. Childbirth Process and Mechanism of Conduplicatio Corpore

The patient experiences spontaneous labor with a very rare mechanism, namely conduplicatio corpore. Labor begins from the upper left arm of the fetus that comes out first, followed by the left scapula, back, buttocks, right arm, right scapula, and finally the head of the fetus. The umbilical appears greenish and smells bad. This mechanism is called "conduplicatio corpore" because the fetus is born in a folded or bent position like a "double-up" instead of a normal position.

This condition is very rarely reported. The study of Bansal et al. (2020) stated that only a handful of cases of abnormal fetal presentations like this are scientifically documented. This mechanism shows the consequences of severe intrauterine infection and death of the fetus in utero, so that the fetal muscles lose tone and facilitate deformity during childbirth (Jung et al., 2020).

3. Maternal Management

Patients were given a combination of 2x1 gram of cefotaxime and 3x500 mg of metronidazole for three days to treat the infection. After childbirth, the mother's condition is stabilized with supportive care and strict observation. This intervention is in accordance with the guidelines for the management of chorioamnionitis recommended by Tita & Andrews (2010) and ACOG (2018). No serious complications were reported in the mother after childbirth.

4. Risk Factor Analysis

The main risk factor in this case is prolonged PPROM which is left without medical intervention for three days. This condition facilitates the entry of bacteria from the vagina into the amniotic cavity. In addition, the low frequency of antenatal examinations and the absence of routine ultrasound examinations worsen the ability to detect complications early.

Socially, patients also show limited access to quality health services. The lack of education and economic resources causes patients to only check themselves with a midwife without further evaluation. This is in line with the research of Goldenberg et al. (2008) which states that socioeconomic factors influence the incidence of intrauterine infections and prematurity.

The findings of this case are consistent with the literature. Newton (2005) and Mercer (2003) emphasized that preterm premature rupture of membranes (PPROM) lasting more than 18 hours increases the risk of intrauterine infection, particularly chorioamnionitis. Reports of *conduplicatio corpore* remain rare, with only a few case studies describing this mechanism. It is generally associated with intrauterine fetal demise or loss of fetal tone, leading to abnormal fetal positioning during delivery. Furthermore, Romero et al. (2014) and Lawn et al. (2005) demonstrated that intrauterine infection is strongly linked to poor neonatal outcomes and increased perinatal mortality. These findings collectively reinforce the evidence that delayed management of PPROM substantially heightens the risk of serious complications for both the mother and the fetus (Kim et al., 2015).

The clinical significance of this case lies in several important lessons. Early detection of PPROM and chorioamnionitis is crucial to prevent life-threatening complications. The

immediate administration of prophylactic antibiotics in cases of PPROM plays a central role in suppressing intrauterine infection. Moreover, improving the quality of antenatal care is essential to avoid the recurrence of such cases. Documentation of rare delivery mechanisms, such as *conduplicatio corpore*, is also valuable as both an educational resource and a clinical reference for healthcare professionals.

This case further highlights the implications for antenatal care. Inadequate prenatal monitoring directly contributed to the adverse perinatal outcome observed. Regular antenatal check-ups could have facilitated earlier recognition of PPROM, allowing preventive interventions to be implemented in a timely manner. Patient education on warning signs during pregnancy and the importance of consistent antenatal care is equally critical in reducing the risk of chorioamnionitis and improving overall maternal and neonatal outcomes (Lukanović, Batkoska, Kavšek, & Druškovič, 2023).

Finally, the psychological and social impacts of such cases should not be overlooked. The loss of a fetus due to intrauterine infection can result in profound emotional trauma for the mother, who requires appropriate psychological support. Providing counseling to the family is also important, both to help them cope with grief and to inform them about risks in future pregnancies, the necessity of antenatal monitoring, and strategies for infection prevention.

Risk factor for chorioamnionitis in this patient was prolonged preterm premature rupture of membrane without any medical treatment. Clinical diagnosis based on the presence of maternal fever (>38°C), maternal leucocytosis, and foul-smelling amniotic fluid (Manuck et al., 2016). Spontaneous delivery is possible in chorioamnionitis when there is conduplicatio corpore.

Despite of the risk factor that already mention earlier, there are other factor that influencing the outcome of pregnancy. Socioeconomic factors such as knowledge, information, economic status and availability of antenatal care facility also play important role in condition of the patient.

CONCLUSION

In conclusion, this case report successfully documents the rare event of spontaneous *conduplicatio corpore* in a patient with clinical chorioamnionitis following prolonged PPROM, highlighting that inadequate antenatal care, delayed presentation, and limited access to health services were critical factors leading to this adverse outcome. This case underscores the vital importance of early detection of PPROM, prompt antibiotic administration, and improved quality and accessibility of antenatal care to prevent such serious complications. For future research, we recommend systematic documentation and analysis of similar rare delivery mechanisms through multi-center case series or international registries to better understand the predisposing factors, management strategies, and overall incidence of *conduplicatio corpore*. This would ultimately contribute to enhanced obstetric emergency preparedness and improved guidelines for managing high-risk pregnancies in resource-limited settings.

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