

Stuck in the Ring: Bandl's Case Report

Preso no Anel de Bandl: Caso clínico

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Abstract

A 27-year-old pregnant woman with a prior vaginal delivery was admitted to the labor ward at 41 weeks with ruptured membranes and 5 cm cervical dilatation. Labor progressed to full dilatation, but the fetal head remained high at the -2 DeLee plane. Nine hours later, cesarean delivery was performed for suspected cephalopelvic disproportion, revealing a Bandl's ring. This pathological retraction ring, located at the junction between the thick, contracting upper and the thin, passive lower uterine segments, is associated with labor dystocia. The image shows a pronounced ridge, illustrating an unforgettable pattern and highlighting the importance of careful clinical observation.

Keywords: Bandl ring; Cesarean delivery; Dystocia.

Resumo

Grávida de 27 anos, com um parto vaginal prévio, admitida no bloco de partos às 41 semanas com rutura de membranas e 5 cm de dilatação. O trabalho de parto progrediu até à dilatação completa, mas a apresentação fetal manteve-se alta, ao nível do plano -2 de DeLee. Nove horas depois, realizou-se cesariana por suspeita de desproporção céfalo-pélvica, tendo sido identificado um anel de Bandl. Este anel de retração patológico, associado a distócia do trabalho de parto, localiza-se na junção dos segmentos uterinos superior (mais espesso) e inferior (mais fino). A imagem evidencia uma depressão pronunciada, ilustrando um padrão inesquecível e salientando a importância da observação clínica cuidadosa.

Palavras-chave: Anel de Bandl; Cesariana; Distócia.

INTRODUCTION

Bandl's ring, first described in 1875¹, is a rare and often underdiagnosed feature of labor dystocia, with an estimated incidence of 0,01-1,26%^{2,3}. Its clinical significance remains uncertain, as it may represent either a cause or a consequence of abnormal labor⁴. During labor, the uterus comprises a thick, contracting upper segment and a thin, passive lower segment; extreme thinning of the lower segment may form a pronounced ridge known as a pathological retraction ring

or Bandl's ring^{2,3,5}. Reported risk factors include a contracted pelvis, prolonged labor, premature rupture of membranes, oxytocin use, and fetal malposition¹.

Clinically, Bandl's ring may manifest as maternal pain, a palpable or visible abdominal ridge, arrest of fetal descent, hypertonic contractions, and, in severe cases, uterine rupture¹. Diagnosis can be challenging because these signs are subtle and easily overlooked¹. Intrapartum ultrasound has emerged as a promising tool for earlier and more accurate detection, particularly in arrested second-stage labor, by assessing the anterior uterine wall and fetal occiput position¹. Timely recognition allows prompt intervention, potentially reducing

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FIGURE 1. Bandl's pathological retraction ring observed during labor, forming a marked ridge between the contracting upper and distended lower uterine segments.

maternal risks such as uterine rupture or hemorrhage, and fetal risks including hypoxia, acidosis, and birth trauma^{1,5}.

CASE REPORT

A 27-year-old woman, gravida 2 para 1, with a previous vaginal delivery of a 3800 g newborn, was

admitted at 41+3 weeks for induction of labor due to advanced gestational age. Antenatal ultrasound at 31+2 weeks showed a cephalic fetus with appropriate growth (P42) and normal amniotic fluid volume. The pregnancy had been uneventful.

Before induction began, spontaneous rupture of membranes occurred, and labor started spontaneously. On admission, cervical dilatation was 5 cm, and the fetal head was at the -2 DeLee plane. Despite

progression to full dilatation, the second stage prolonged without fetal descent. Oxytocin was discontinued due fetal tachycardia and late decelerations on CTG.

Nine hours after membrane rupture, cesarean delivery was performed for suspected cephalopelvic disproportion following observation of a Bandl's ring. A live infant weighing 4635 g was delivered through a standard low transverse incision, with Apgar scores of 9/9/10. Postpartum hemoglobin was 11,3 g/dL, and the puerperium was uneventful.

DISCUSSION

Labor dystocia affects up to 30% of pregnancies and accounts for nearly half of unplanned cesarean deliveries in primiparas¹. The true incidence of Bandl's ring is unclear due to subtle clinical signs, diagnostic difficulty, and potential confusion with the physiological retraction ring^{1,2}. Because of its rarity, the risk of recurrence and impact on future labor remain uncertain³. Although uncommon today, likely due to improved management and avoidance of prolonged obstructed labor, pathological uterine rings still occur, and delayed recognition may lead to severe maternal and neonatal complications^{4,5}.

CONCLUSION

The presented image illustrates a rare but distinctive clinical sign, commonly referred to as Bandl's ring sign, which once seen is unlikely to be forgotten – truly “worth a thousand words”. Its main clinical relevance

lies in the risk of uterine rupture if unrecognized; therefore, awareness and prompt diagnosis are essential. Clinicians should always consider Bandl's ring when labor is arrested despite full dilatation.

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AUTHORS' CONTRIBUTIONS

Carolina Mendonça: Preparation of the case report; data collection; Marta Afonso: Critical revision of the manuscript; Sara Valadares: Image acquisition; final manuscript revision.

CONFLICTS OF INTEREST

The authors report no conflict of interest.

PATIENT CONSENT

The informed consent was obtained.

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