

# Should external cephalic version be attempted in the presence of a nuchal cord?

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## Summary

**Objective:** The efficacy and safety of external cephalic version (ECV) for breech presentation in the presence of a nuchal cord has not been studied. Here the authors report two cases of failed ECV in the presence of nuchal cord. **Case Report:** A 28-year-old, G4P3A0, presented at term with breech presentation. Umbilical cord was demonstrated ultrasonographically to be wrapped twice around the neck. External cephalic version was attempted three times with no success. A 25-year-old, G1P0A0, was diagnosed with breech presentation at 36 weeks' gestation. A nuchal cord was wrapped twice around the fetal neck. ECV was performed three times unsuccessfully. No complications were noted during or after the procedures in both cases. **Conclusion:** The present findings could suggest a new relative contraindication that should be further investigated.

**Key words:** Breech presentation; Cesarean section; External cephalic version; Fetal malpresentation; Fetal version; Nuchal cord.

## Introduction

Breech presentation complicates between three to four percent of term pregnancies [1]. External cephalic version (ECV) prior to the onset of labor was proven safe and effective in decreasing the prevalence of breech presentation at term. Nuchal cord is a prevalent finding in pregnancy, with an estimated incidence around 30 percent at term. The implications of performing ECV in the presence of nuchal cord have yet to be studied [1].

The authors report two cases of failed ECV. In both cases, the presence of a nuchal cord was demonstrated sonographically before the procedure and was confirmed at the time of delivery.

## Case Report

**Case #1:** A 28-year-old, G4P3A0, presented at 37 weeks' gestation for assessment. Sonographic evaluation revealed a frank breech. Estimated fetal weight (EFW) was 2,800 grams, amniotic fluid index (AFI) was 10.3 cm, and the umbilical cord was demonstrated to be wrapped twice around the neck. Ritodrine hydrochloride was administered and ECV was attempted three times without success using the "forward-roll". Patient declined an elective cesarean delivery (CD). At 39 weeks' gestation, she presented in active labor with a breech presentation. A trial of labor was undertaken. At eight centimeters cervical dilatation and station -3, recurrent variable decelerations were observed and arrest of descent was diagnosed. An emergency CD was performed. A live born baby boy weighing 3,000 grams was delivered. The

five-minute Apgar score was 10. A nuchal cord was wrapped tightly around the neck twice. The uterine cavity was normal.

**Case #2:** A 25-year-old, G1P0A0, presented for routine prenatal care at 36 weeks' gestation. Frank breech presentation was diagnosed. EFW was 3,497 grams, AFI was 11 cm, and the placenta was posterior. A nuchal cord was wrapped twice around the fetal neck. Ritodrine hydrochloride was given intramuscularly. A "forward-roll" was attempted three times unsuccessfully. At 38 weeks' gestation, an elective CD was performed. A live born baby girl weighing 3,140 grams was delivered. The five-minute Apgar scores was 10. A nuchal cord was wrapped tightly around the neck twice. The uterine cavity was normal.

## Discussion

Breech presentation is an important cause of morbidity and mortality. The etiology of breech presentation is poorly defined. Both maternal as well as fetal factors may predispose to breech presentation. Delivery of the fetus presenting as breech is usually accomplished by CD, as this has been shown to decrease the risk to the baby. ECV prior to the onset of labor has been shown to decrease CD rate by decreasing the incidence of breech presentation in labor. Factors associated with ECV failure are well established [2].

Umbilical cord shortening has been suggested as a factor etiologically related to breech presentation [3]. Additionally, short umbilical cord in the presence of breech presentation was associated with poor ECV outcome [4]. The

presence of a nuchal cord, a feature which complicates one-third of all term deliveries, leads to functional shortening of the umbilical cord, and may limit fetal mobility. This may predispose to breech presentation, and may decrease the likelihood of performing a successful ECV. Moreover, the presence of a nuchal cord at the time of ECV may predispose to fetal heart rate decelerations, by compressing the umbilical cord. To the best of the authors' knowledge, the efficacy and safety of ECV in the presence of a nuchal cord has yet to be explored. Some centers view the presence of a nuchal cord as a contraindication to performing an ECV, [5, 6], although this clinical issue has yet to be studied [1].

The present authors propose that the evaluation of patients with breech presentation who are considering ECV, include a sonographic examination of the fetal neck to exclude the presence of a nuchal cord. This evaluation should be undertaken immediately before performing the ECV, as the sonographic diagnosis of a nuchal cord has been shown to resolve over time [6]. Further studies to examine the efficacy and safety of ECV in the setting of a nuchal cord may help define the optimal selection criteria for this procedure.

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