

# Twin Pregnancy Complicated By Interlocking: A Case Report

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Management of labor in multiple pregnancies is one of the most attracting subjects of obstetrics. Presentation of twin pairs is the major determinant of the route of delivery. In the past how to deliver breech vertex twin pairs was a conflicting decision. Anesthesia, technical difficulties and antibiotic options restricted the use of cesarean section. Under such circumstances even sacrifice of one of the babies could be acceptable and thus mortality and morbidity was high. Recently we prefer the abdominal route for delivery of breech vertex twins. Maternal morbidity is only slightly increased in cesarean sections when compared to vaginal delivery with the innovations of today. We now present a case of breech vertex twins which were interlocked during vaginal delivery and the first twin could be delivered up to the scapulas. The delivery of the first breech twin could be completed only after the abdominal delivery of the second vertex twin. The babies both did very well in contrast to their difficult delivery. This condition presented a chance for us to review the management of delivery of breech vertex twin pairs in the literature and to present our own clinical experience.

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Multiple pregnancies have long been a focus of interest in obstetrical practice. Complications and management of multiple pregnancies have been widely studied, modifications in follow up and treatment programs are suggested.

The increasing use of reproductive endocrine techniques has brought about an increasing incidence of multiple gestations. The risk for adverse outcome is dramatically increased in multiple gestations. As the incidence has increased two-fold over the past decade we now have a markedly pronounced problem related to these pregnancies.<sup>1</sup> Most of the morbidity and mortality associated with multiple gestations is the result of premature delivery. Other factors such as intrauterine growth restriction, congenital anomalies, malpresentation, placental abnormalities, and pregnancy induced hypertension also contribute to the morbidity and mortality. These complications all affect the intrapartum management of twin gestations. Vice versa close intrapartum fetal surveillance and management affects the perinatal outcome.

The optimal intrapartum management of multiple gestations continues to be debated. Presentations of fetuses, expected fetal weights, amount of amniotic fluid, placental locations, chorionicity (visualization of intertwin membrane) and viability of each fetus are the factors which determine the follow up and management.<sup>1</sup> Among these factors, presentation of twin pairs is probably the most important determinant of intrapartum management. There is more or less a consensus on the route of delivery of vertex-vertex and vertex-

nonvertex presentations, but although the rate of non-vertex vertex presentations in the total twin population is low, their management is one of the most controversial issues.

The reported incidence of non-vertex vertex presentation is 20% of all twins.<sup>1</sup> The primary concern over management of delivery involves the risk of fetal interlocking. The overall incidence of interlocking is 1 in 645 according to Rydholm and Cullberg.<sup>2</sup> This disastrous outcome is encountered more often (1 in 91) in breech-vertex presentations.<sup>2</sup> Perinatal mortality in vaginally delivered first born twins of locked twin pairs is 43.5% an unacceptable figure.<sup>3-6</sup>

When the reported high mortality rate of vaginal delivery in locked twins is considered, one can easily favour the use of cesarean section with only a slightly increased morbidity rate as compared with vaginal delivery.

We report a case of locked twins and our own experience in the management of breech vertex twin deliveries.

## Case Report

A 16 year old primigravida (N.G.) was admitted at 30 weeks' gestation to Zeynep Kamil Women's and Children's Hospital with a history of ruptured membranes of 2 days duration. On admission, the cervix was 2 cm dilated and 40% effaced. Ultrasonography revealed monochorionic, diamniotic twin gestation of 30 weeks-Twin A a breech, Twin B a vertex presentation. Tocolysis with ritodrine was initiated and betamethasone 12 mg was applied. Antibiotherapy with cephalosporin was started due to the history of ruptured membranes. Meanwhile leucocyte count, cervical culture, CRP were obtained. After 16 hours of ritodrine tocolysis and resolution of contractions for more than 12 hours tocolysis was discontinued. In the subsequent 3 days, the second dose of betamethasone was applied, leucocyte counts and clinical findings of chorioamnionitis were followed in the perinatology service. Neither laboratory nor clinical findings sugges-

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ted chorioamnionitis and the patient was managed conservatively. At the end of these 3 days the mother complaining of contractions was examined. The cervix was found to be 8 cm dilated and 90% effaced with breech of twin A at +2 station. A decision to deliver the babies by vaginal route was made. Cervix progressed to full dilatation in half an hour. Twin A in breech presentation was delivered up to the level of scapulas over a wide right mediolateral episiotomy. Attempts to deliver the baby with Bracht manoeuvre were unsuccessful. An emergent ultrasound revealed interlocking of the heads of fetuses. A cesarean section was performed. After abdominal delivery of twin B (a 1430 gr male), twin A (a 1200 gr male) was delivered by vaginal route with Bracht manoeuvre. Twin A was born with 1st minute Apgar score of 1 and 5<sup>th</sup> minute score of 3. He was asphyctic and had a heart rate of less than 100 beats/min. Thus he was immediately intubated and admitted to the Neonatal Intensive Care Unit (NICU). He was connected to the mechanical ventilator and was treated with antibiotics and dopamin infusion. After 56 hours, he was weaned from mechanical ventilator. Total parenteral nutrition was started on day 1 and increased in a stepwise manner. Mother's milk was started on day 7. On day 9 the baby was feeding only on mother's milk. Twin B was admitted to the NICU at birth because of low birthweight and was treated with antibiotics because of PROM. Both babies were externalized on day 11. The mother also did well after the cesarean section and she was discharged on the tenth postoperative day.

## Discussion

Fetal interlocking is defined as the approximation of the inferior surfaces of a twin's chin with its co-twin above or below the pelvic inlet.<sup>3</sup> Interlocking twins are found to occur in 1 in 645 twin gestations. This incidence increases to 1 in 91 when the twins are located longitudinally and the fetal poles are opposite each other according to Rydstrom and Cullberg.<sup>2</sup> The highest rate of entanglement was encountered in cases of the death of one fetus in a breech vertex twin pair (1 in 16). According to Cohen et al twin entanglement was found to occur in 1 in 1000 twin gestations. It was seen in 1 out of 87 breech vertex presentations.<sup>4</sup>

Most significant etiologic factors are age and parity of the mother and the size of twins. Nissen reports that 72% of the mothers of interlocked twins are primigravidas. 77% of these mothers are under the age of 30.<sup>6</sup> The smaller the size of the twins, the larger is the area for them to compete for the pelvic inlet. So while smaller twin pairs lock after descent in the pelvis larger twins lock above the pelvic inlet.<sup>4,7</sup>

Perinatal mortality in first born twins delivered vaginally versus by cesarean section is demonstrated to be increased twofold by Kelsick and Minkoff (4.6%-2.4%).<sup>8</sup> More recently vaginal delivery was suggested to be safe under suitable conditions. 38 first born breech twins were compared to singleton breech deliveries (all vaginally delivered) and

no added risk was found for breech twins when compared with singletons by Buekens et al.<sup>9</sup> Blickstein et al compared 24 breech vertex twins delivered by vaginal route with 35 breech vertex twins delivered abdominally. Perinatal outcomes of both groups were similar.<sup>10</sup>

In the five years between 2000 and 2004, 1235 twin pairs were born in Zeynep Kamil Women's and Children's Hospital. Among these twins 141 pairs were in breech-vertex presentation. 121 of them (86%) were delivered by cesarean section. 14% (n=20) of all, were delivered vaginally. One of these 20 twin pairs is the case which we presented. So according to our experience incidence of interlocking is 1 in 20 among breech vertex twin pairs. In our case although the first twin could not be delivered until the second twin was delivered abdominally, and the twins were premature, both babies did well. Fetal outcome of interlocked twins after vaginal delivery reported in the literature is not that favourable. Mortality is reported to be between 29% to 54% according to the mode of delivery, whether the delivery is spontaneous or disengagement or decapitation is attempted.<sup>4,6</sup> In reviewing cases presented in the literature, vaginal delivery resulted in a 43.5% total perinatal mortality. Decapitation of the first twin accounted for most of the mortality.<sup>3-5,11</sup> When locking is confirmed and disengagement is unsuccessful cesarean section can save the second twin.

In our experience when the presentations of twins are breech-vertex cesarean section is performed. The decision to deliver the babies vaginally in the case presented was made because when the mother was admitted to the delivery room, cervix was 8 cm, 90% effaced, and breech of Twin A was at station +2.

We recommend that all twin pregnancies should be evaluated with an initial ultrasound on admission as well as a repeat ultrasound examination if the progression of labour is arrested. In case of breech-vertex presentations cesarean section should be undertaken bearing in mind that reliability of anaesthesia, technique and antibiotics are much better today. Furthermore, complications of disengagement and decapitation are now unacceptable considering the only slightly increased risk of cesarean section for the mother. Although the outcome of the twins in this case was not disastrous we are aware that the story might not have ended that favourable. We believe that we owe this to our immediate change in strategy without insisting on vaginal delivery and a possibly harmful trial of disengagement on premature fetuses. Thus in case of presentation of an already started second stage of labour in a breech-vertex twin pair one should immediately perform cesarean section if there is any suspicion or diagnosis of interlocking without any attempt to dislodge the fetuses.

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