Contents lists available at ScienceDirect



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Best Practice & Research Clinical Obstetrics and Gynaecology Olnica Obstetrics & Gynaecology

journal homepage: www.elsevier.com/locate/bpobgyn

# Twin delivery: Method, timing and conduct



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Keywords: twin gestation twin pregnancy Twin Birth Study twin caesarean section vaginal delivery in twins the non-vertex second twin epidural in twin delivery time interval in twin delivery The incidence of twin pregnancy has increased worldwide over the past 10 years, largely as a consequence of the assisted reproductive technologies. Issues such as intrapartum monitoring and operative interventions, especially relating to the second twin, provide a unique challenge in labour and delivery. Epidemiological and cohort data suggest that twins have a three-fold higher mortality rate than singletons, and that the second twin might have a better outcome if delivered by lower segment caesarean section. The recently completed Twin Birth Study has found that planned vaginal lower segment caesarean section is not advantageous to the fetus. In the light of this large randomised-controlled trial, vaginal delivery if twin A presents by the vertex is recommended as long as guidelines for the conduct of such delivery are followed.

# Introduction

The conduct of a twin delivery remains one of the most challenging events in the daily practice of obstetrics. In Canada, the incidence of twin delivery increased by 15% between 2007 and 2012 [1,2]. Apart from the Province of Quebec, which has funded in-vitro fertilization (IVF) services and legislated the number of embryos that may be implanted during IVF cycles, the incidence of twin gestation continues to rise [3]. Therefore, the issues addressed in this chapter will be of continuing international importance. The perennial dilemmas that apply to any singleton delivery, such as intra-partum monitoring and operative interventions, are compounded by the presence of the second fetus. The second twin presents unique challenges in labour, and much of the controversy and discussion in this chapter will focus on the delivery of the second twin.

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1521-6934/\$ - see front matter © 2014 Elsevier Ltd. All rights reserved. http://dx.doi.org/10.1016/j.bpobgyn.2013.12.008 Twin pregnancies are at a higher risk of perinatal and neonatal mortality than singleton pregnancies. Even among twin fetuses that are over 2500 g at birth [4–10], a higher risk of death occurs among singletons of the same birth weight. Neonatal seizures, respiratory morbidity, and low Apgar scores at 1 and 5 mins have also been shown to be higher for twins compared with the singleton infant at birth weights over 1500 g and over 3000 g [6].

The Term Breech Trial [11] found that planned caesarean section reduced the risk of perinatal death or serious neonatal morbidity three-fold (from 5.0% to 1.6%; P < 0.001). This resulted in general agreement that twins in which the first twin is breech should be delivered by caesarean section. The findings of this trial, however, where extrapolated to all twin pregnancies in which the second twin is also often in a non-vertex presentation, and it was this increasingly considered beneficial for all twin pregnancies to be delivered by planned caesarean section.

What method of delivery should be planned for twin pregnancies? How should the delivery be conducted, and what is the optimal way to conduct a vaginal twin birth? Fortunately, many of these answers are now available to us in the form of level 1 randomised-controlled trial evidence, the Twin Birth Study [12].

## Indications for elective caesarean section

Absolute indications for elective caesarean section are minimal, and certainly no good clinical studies on which to base strong recommendations are available. It seems that caesarean section without a trial of labour should be carried out in cases of conjoined twins and mono-amniotic twins. Timing of delivery, however, is still in question, with a recommended range of 32–36 weeks. It is my practice to deliver conjoined and mono-amniotic twins at around 32–33 weeks after a period of inpatient observation [13–17].

The other indications for elective caesarean section are not dissimilar to those of a singleton pregnancy, and include placenta praevia, and antenatal evidence of significant fetal compromise likely to worsen during labour.

### The first twin breech

Caesarean section, when the first twin presents as a breech, has long been regarded as a relative contraindication for vaginal delivery [2,18]. One of the major concerns with breech and vertex twins, which occurs in about 20% of all twins in labour [10,19–21], is the risk of locked twins [22]. This complication is uncommon, with an estimated frequency of one in 645 twin births, and only 147 cases reported in the world literature between 1958 and 1987. The mortality associated with fetal entanglement, however, is extremely high: between 30– 43% [22–24]. Some studies have challenged the need to carry out caesarean section for all twins with the first fetus in breech presentation [25]. In a total of 141 twin pairs, all of whom had a non-vertex twin A, no difference was found in neonatal mortality or morbidity.

The randomised-controlled trial on singleton term breech delivery, The Term Breech Trail [11], reported that the chance of an infant dying as a result of a policy of planned vaginal birth is one out of 300, and the chance of significant handicap is one out of 20 [11]. This study, not without controversy, has provided level 1 evidence that a policy of planned lower segment caesarean section will reduce morbidity and mortality, without a significant increase in immediate maternal complications. This seems to have been borne out in at least one country study, in which the implication of changing to lower segment caesarean section for breech presentation has been studied [26]. It seems difficult, therefore, to recommend vaginal birth in twins that have the additional risks discussed above and in the remainder of this chapter.

### **Timing of delivery**

The timing of delivery, either by induction or elective caesarean section, is an important consideration in twin delivery. The controversy, in general, addresses data that show an increase in still birth, neonatal death rates, or both, around 37–39 weeks of gestation [7,27–31]. On the other hand, the

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