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Growth Patterns in Preterm and Term Twin Deliveries

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Abstract. Preterm deliveries in singleton pregnancies have been shown to be associated with decreased rate of growth in utero. A total of 113 sets of twins were scanned serially at fortnightly intervals to establish fetal growth. There was no significant difference in the growth pattern in twins delivered before 37 weeks compared to those delivered after this time.

Key words: Twin fetal growth, Preterm and term twins

INTRODUCTION

Some workers have shown that ultrasonographic measurements of fetuses born preterm are smaller than expected [1-3]. It has been postulated that in pregnancies complicated by preterm labour there is diminished fetal growth as demonstrated by ultrasonic measurements. This may help to identify the group of patients who are at risk of preterm delivery [1]. These studies were based on a singleton population. As twins represent a group who is at risk of preterm delivery we decided to look at the growth patterns of twins in utero to see if there was any difference in twins delivering preterm compared to those who deliver at term.

PATIENTS AND METHODS

The study was conducted over a two-year period. Patients were recruited from the twin clinic held at Aberdeen Maternity Hospital. One operator performed all the scans (A.P.M.S.). The same machine was used to scan all the patients, ie, a 3.5 MHz linear array transducer probe (Ultramark 4 A.T.L.). The study was prospective and longitudinal. A total of 113 sets of twins were scanned serially at fortnightly intervals from 16

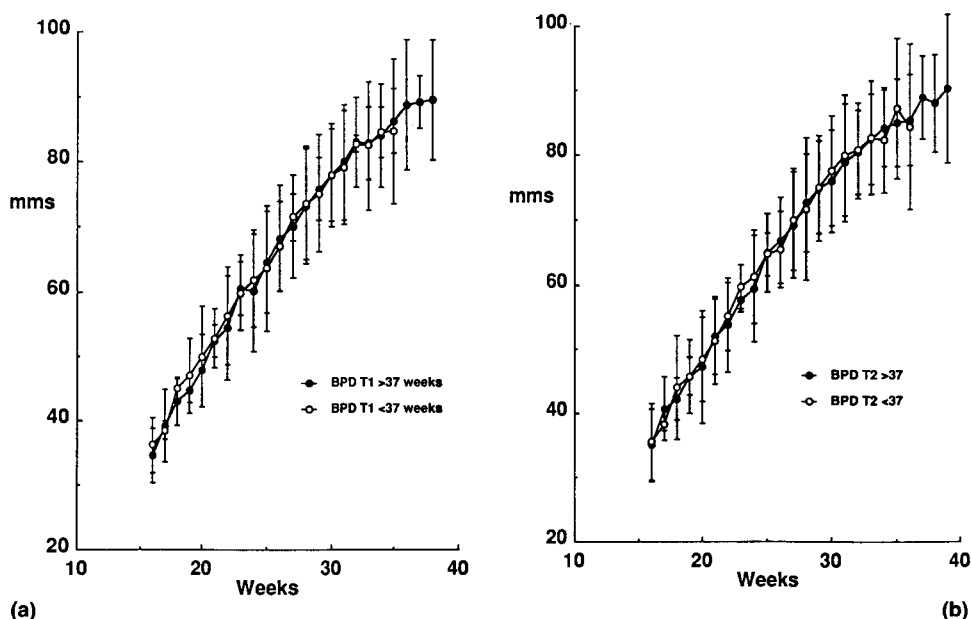


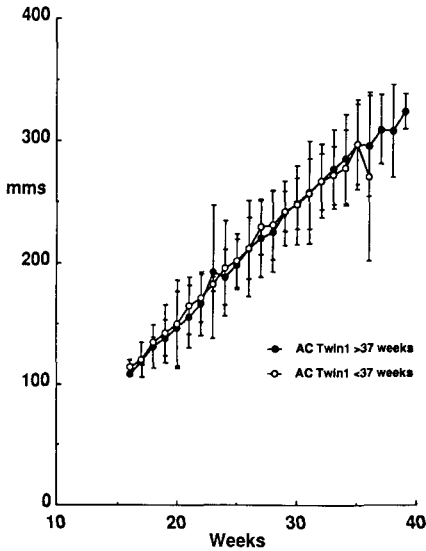
Fig. 1. Biparietal diameter growth in Twin 1 (a) and Twin 2 (b) delivering before and after 37 weeks gestation.

to 39 weeks measuring biparietal diameter (BPD), abdominal circumference (AC) and femur length (FL). Gestational age was confirmed in the first trimester by measurement of the crown-rump lengths. If the patient had unsure dates or the dates did not agree with gestational age as determined by initial scan, then a further scan was performed at 16 weeks by measuring the biparietal diameter and femur length. If the scan dates still did not agree with the patients dates, then the scan dates were taken. The above measurements were made for each twin at each visit where possible. The twin presenting first was labelled Twin 1 and the side on the maternal abdomen noted. Twin 2 was labelled likewise. Four sets of twins were excluded from the study for the following reasons: two where the cotwin died in utero, one where there was a major cardiac anomaly present in both twins (hypoplastic left heart syndrome), and one which spontaneously aborted at 20 weeks.

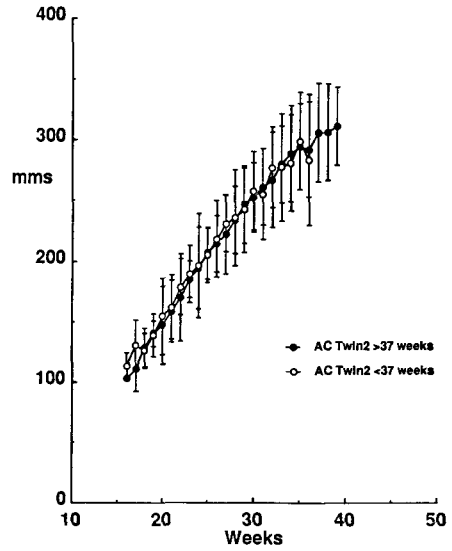
RESULTS

A total of 46 sets of twins out of 109 delivered before 37 weeks gestation (42%), and 10 out of 109 delivered before 32 weeks (9%).

As a whole, 375 BPD measurements were obtained for Twin 1 and 449 measurements for Twin 2. The mean (± 2 SD) biparietal diameters for Twin 1 delivering before 37 weeks were plotted against gestational age. The mean (± 2 SD) biparietal diameters for Twin 1 delivering after 37 weeks were superimposed on this graph (Fig. 1a). The same



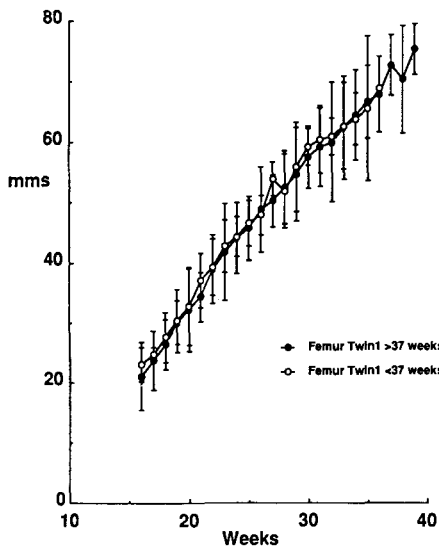
(a)



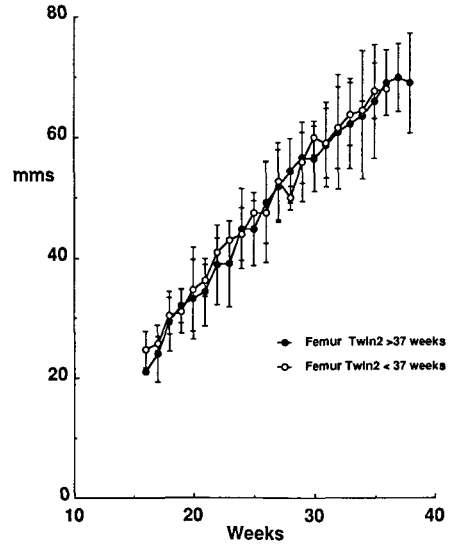
(b)

Fig. 2. Abdominal circumference growth in Twin 1 (a) and Twin 2 (b) delivering before and after 37 weeks gestation.

was done for Twin 2 (Fig. 1b). Similarly, 472 abdominal circumference measurements were obtained for Twin 1 and 469 for Twin 2. As before, these values were plotted against gestational age (Fig. 2a,2b). A total of 289 femur length measurements were ob-



(a)



(b)

Fig. 3. Femur length growth in Twin 1 (a) and Twin 2 (b) delivering before and after 37 weeks gestation.

tained for Twin 1 and 260 for Twin 2. Once again, these values were plotted against gestational age (Fig. 3a,3b).

There were no significant differences in the growth patterns in twins delivering preterm compared to those delivering at term when the Student's *t* test was used to compare the mean values at each gestation for BPD, AC and FL for both Twin 1 and Twin 2. This is demonstrated in Figs. 1-3.

DISCUSSION

It appears from this study that there is no difference in the growth pattern in twins delivering preterm compared to those delivering at term. Unlike the findings in singletons, fetal growth does not appear to affect preterm delivery. As the growth in utero of both term and preterm twin fetuses appear to be similar, it is proposed that these values be used when creating growth charts for twins.

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