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THE MANAGEMENT OF TWIN PREGNANCY

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It is not generally realized that there is a considerable foetal wastage, and also an increased risk to the mother, associated with twin pregnancy. In order to emphasize these dangers I have analysed 105 cases of twin pregnancy delivered at Addington Hospital, Durban, during the period 1 January 1954 to 30 June 1958. I have also used figures from the available literature.

If one is to anticipate the complications of twin pregnancy it is essential in the first instance to establish the diagnosis. This may be surprisingly difficult. At Addington the antepartum diagnosis was made in 69% of cases before delivery. Guttmacher[1] diagnosed 70% of term twin pregnancies.

Diagnosis

The condition should be suspected if the uterus is unduly large for the period of gestation, although this sign is sometimes very misleading, even during early pregnancy. On palpation the most reliable evidence is the finding of 3 foetal poles, either 2 vertices and a breech, or 2 breeches and a vertex. Diagnosis by auscultation depends upon 2 observers simultaneously hearing 2 foetal hearts, separated by a silent area and beating at different rates. Since a second observer is seldom available auscultation is of little practical value in diagnosis. Vaginal examination may prove helpful in establishing the diagnosis.

When the diagnosis is not clear there should be no hesitation in resorting to radiography. The chance of malignant disease occuring before the age of 10 years, following X-ray examination *in utero*, according to Stewart *et al.*,[2] is less than 1 in 1,000. On the other hand, with twins there is a heavy perinatal mortality due largely to prematurity, and this may be reduced if early diagnosis is made. A single anteroposterior exposure covering the whole abdomen will suffice. Browne[3] states that when twins are suspected X-rays should always be used, if available, since they indicate the lie of the foetuses, gross foetal abnormality and the possible complications of delivery.

Complications of Pregnancy

The minor ailments of pregnancy, such as varicose veins, constipation, oedema of the legs and shortness of breath, are usually exaggerated. Hyperemesis, contrary to the usual teaching, was not a significant feature in this series of twin pregnancy; no patient required admission on this account.

Since anaemia is common in pregnancy, and more so in twin pregnancy, there is good reason to give an iron preparation as a routine to every pregnant woman.[4] Ferrous gluconate is well tolerated. To ensure that the haemoglobin concentration is near normal, the haemoglobin level should be estimated not only at the first visit but again at the 32nd and 36th week; if less than 10·4g. or 70%, a full blood count should be obtained to identify the nature of the anaemia. After the 36th week of pregnancy there is little time left to correct an anaemia before delivery. If at the 36th week the haemoglobin level is less than 10·4 g. or 70%, parenteral iron should be prescribed. Imferon is a suitable intramuscular preparation. If delivery is imminent and the haemoglobin level is below 8·9 g. or 60% a slow transfusion of packed cells is advisable.

Premature Labour

The high foetal mortality is directly related to the incidence of premature labour. Of the Addington infants 56% weighed less than 5½ lb. (2,500 g.). One foetus papyraceus was delivered. Munnell and Taylor[5] found that only 53% of twin pregnancies reached 36 weeks. This incidence has been significantly reduced by early admission to hospital for bed rest. Russell[6] has shown that this is particularly important in the low-income group, in whom there is a significantly higher incidence of premature labour than in the upper social classes. He believes that this is explained by the better diet of the high-income group and by the fact that they enjoy more leisure and consequently more rest during their pregnancies. It is now well-established practice in some obstetric units to admit cases of twin gestation to hospital from the 30-34th week of pregnancy. The patient can then be discharged with the knowledge that the foetuses will have an improved chance of survival should premature labour supervene. Such management naturally necessitates the early diagnosis of twin pregnancy. The importance of radiography has already been stressed. Early hospitalization is unfortunately usually not practicable, and weekly attendance at the antenatal clinic is then essential so that complications may be recognized early.

Toxaemia

Pre-eclampsia with multiple pregnancy is about 3 times commoner than with single pregnancy, occurs earlier in pregnancy, and is more severe than in single pregnancy. The incidence of toxaemia in 472 twin pregnancies seen by Bender[7] was 24%. Eclampsia, likewise occurs more often. At Addington the incidence of pre-eclampsia was 31%. Two patients developed eclampsia.

Strict control of weight gain is essential and the earliest sign of pre-eclampsia necessitates hospital admission. If possible, pregnancy should be allowed to continue till term, in the hope of obtaining more mature infants. After the 37th week, however, if deterioration occurs, labour should be induced by artificial rupture of the membranes. A careful examination should always be made after surgical induction to exclude prolapse of the cord, particularly if the first foetus is presenting by the breech.

Hydramnios

It is accepted that the presence of hydramnios should always suggest the possibility of a twin gestation. An X-ray is advisable, firstly to exclude gross foetal abnormality and secondly to determine the number of foetuses and their presentations. Since the diagnosis of hydramnios depends largely on individual impressions, no attempt has been made to ascertain the incidence in the present series. Bender[7] noted an occurrence of 10·6% in twin as against 0·5% in single pregnancies.

Antepartum Haemorrhage

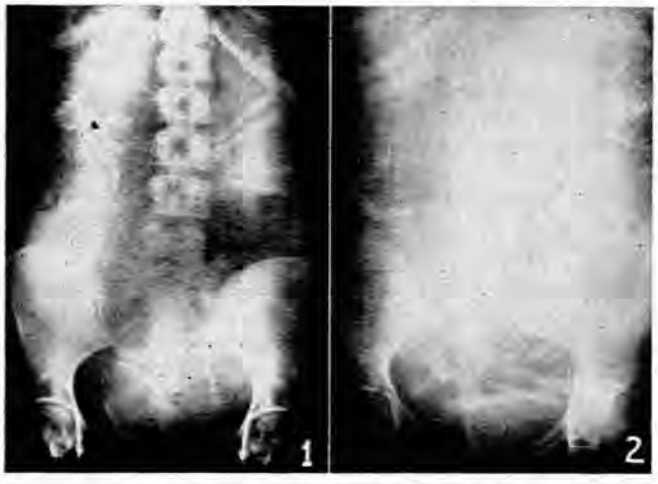
The incidence of antepartum haemorrhage in this series is surprisingly low. Placenta praevia was not encountered, but one patient had an antepartum haemorrhage which was not classified. The large placenta apparently seldom encroaches onto the lower segment. Potter and Fuller[8] recorded an incidence of 1·2% of placenta praevia in twin pregnancies. The general rate is 0·5%.[3]

The incidence of accidental haemorrhage, likewise, is little higher than with single pregnancy. Accidental haemorrhage occurred in 1·7% of Bender's cases, as compared with the rate of 1·3% in single pregnancies over the same period.[7]

Malpresentation

The foetuses usually lie longitudinally. In about 20% the first foetus presents by the breech. In 5 of the Addington series the diagnosis of twin gestation was made only after external cephalic version had been attempted. Version is of course contra-indicated when twins are present.

It is important to remember that the lie of the foetuses may change during pregnancy. This is well illustrated by



the radiographs taken of one patient at the 30th and 36th week of pregnancy (Figs. 1 and 2). It is therefore necessary to re-examine the patient carefully on admission to the labour ward. Vaginal examination is invaluable in difficult cases.

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The following special precautions should be taken in twin labour:

(1) An anaesthetist should be available.

(2) Forceps and episiotomy tray should be kept in readiness, with 1% procaine for local infiltration.

(3) An infant resuscitation tray should be prepared.

(4) Facilities for dealing with premature infants should be available.

Bender,[7] contrary to common belief, was unable to confirm that with twin deliveries labour is significantly prolonged.

The delivery of the first infant usually causes little or no difficulty. When the membranes rupture, an immediate vaginal examination is made to exclude prolapse of the umbilical cord. If the first twin presents by the breech, one should be prepared for episiotomy, and have a forceps tray in readiness. Fortunately twin breech deliveries are usually not complicated.

After the first infant is born the cord is tied and divided between two ligatures. The lie of the second twin is then immediately determined by abdominal and vaginal examination. If transverse, the lie is corrected by external version to a longitudinal one.

The foetal heart is carefully observed during the period of waiting which follows. The average interval between births, without interference, has been found to be between 12 and 15 minutes.[5, 7] It therefore seems reasonable to rupture the second bag of membranes after a lapse of 10 minutes, or sooner if the contractions return.

Rarely is the delivery of the second twin delayed. Under these circumstances it has been my practice to deliver the second twin after 1 hour if delivery is not imminent, either by forceps or breech extraction. De Lee and Greenhill[9] advocate such interferance and they warn of the dangers of waiting, namely haemorrhage and death of the second twin due to asphyxia from placental-site retraction.

If a general anaesthetic has been necessary in the course of delivery of the first infant one should empty the uterus. It is unfair to the patient not to do so; moreover, operative interference may again become necessary. Aaron and Halperin[10] take routine steps to deliver the second twin immediately after the first is born, and with good results (foetal loss 9·8%).

Immediate delivery of the second twin is indicated if the placenta separates, the cord prolapses, or foetal distress supervenes. Since one cannot anticipate these complications, an anaesthetist should be present at all twin deliveries. There were 2 cases of intrapartum haemorrhage in the Addington series.

If ergometrine is inadvertently given after the birth of the first twin to a woman in whom twin pregnancy has hitherto been unsuspected, the second twin should immediately be extracted.

Premature Labour

The high incidence of premature labour has already been stressed. If early labour supervenes, the following well known precautions should be taken:

Sedatives and analgesics must be sparingly used because of their depressant action on the respiratory centre, which is not fully developed in the premature infant. Morphia should be avoided.

In the hope of reducing the risk of neonatal haemorrhage, 10 mg. of vitamin K should be given to the mother several hours before delivery or alternatively 0·5 mg. vitamin K to the infant immediately after birth.

The second stage of labour is dangerous since the premature infant is particularly prone to intracranial injury. The head is best protected from excessive moulding by elective episiotomy under local anaesthesia as soon as perineal pressure

begins. A multipara with a relaxed introitus will naturally not need an episiotomy. It is controversial whether the routine use of outlet forceps lowers the incidence of intracranial haemorrhage.

The prognosis for the newborn premature infant will obviously be heavily influenced by the facilities available for their care.

Postpartum Haemorrhage

The 25%-incidence in the Addington series (Table I) where ergometrine is not used as a routine, is disturbingly high. Bender[7] was able to reduce the incidence of postpartum haemorrhage from 10·4% to 2·7% by the intravenous administration of ergometrine at the end of the second stage.

TABLE I. POSTPARTUM HAEMORRHAGE IN TWIN PREGNANCIES (%)

Potter and Fuller[8] (1949)	10·0
Bender[7] (1952)	10·6
Addington series (1958)	25·0

Ergometrine, 0·5 mg., is a suitable dose. In the 1955 edition of *Britsh Obstetric Practice*[11] it is suggested that a supply of compatible blood be available for every twin delivery. The patient should remain under constant supervision for at least 3 hours to ensure that relaxation of the uterus does not occur.

Twin Locking

This is very rare and dangerous. The presentations associated with locking are usually breech and vertex. If the first foetus can be easily disimpacted and delivered, then this is the correct treatment. If disengagement is impossible, then Caesarean section is probably safer than a traumatic vaginal delivery.

Maternal Mortality

No death occurred in this series, but the maternal death rate in twin pregnancy is undoubtedly high. Guttmacher[1] reported 23 maternal deaths (2%) in a total of 1,163 cases of twin pregnancy collected from the literature.

Foetal Loss

The perinatal mortality in this series was 6%, which is comparatively good. Russell[6] recorded a foetal mortality of 16% in 49 booked cases at the Aberdeen Maternity Hospital. Prematurity was a factor in all but 2 cases.

TABLE II. FOETAL LOSS IN TWIN PREGNANCY (%)

	Cases	*Foetal Mortality* %
Russell[6] (1952)	49	16·0
Potter and Fuller[8] (1949)	252	14·0
Aaron and Halperin[10] (1955)	376	9·8
Bender[7] (1952)	472	11·0

Toxaemia, complications of delivery and crowding in the uterus also contribute to the high foetal wastage.[12] The comparative percentage figures in other series are shown in Table II.

Operative Interference at Delivery

Russell[6] found that operative interference, excluding uncomplicated assisted breech delivery, was necessary in 16 of 49 cases. Of the Addington patients 15 (14%) required operative delivery (excluding the 2 patients delivered by Caesarean section). The commonest manipulations were forceps delivery, internal version, and breech extraction. Contrary to others, Potter *et al.*[8] insist that there is no increased hazard for the second twin.

Bender[7] reported that operative delivery of the second twin was necessary in 85 of 472 consecutive twin deliveries. He also found that operative delivery of the second twin was not associated with an increased risk to the infant.

Caesarean Section in Twin Pregnancies

There is no appreciable difference in the incidence of Caesarean section in multiple and single pregnancy. About 5% of women in hospital are now delivered by the abdominal route.[4]

Two of the Addington series were delivered by lower-segment Caesarean section. Both were undiagnosed twin gestations. Abdominal delivery was necessary in the first because of previous section for contracted pelvis, and in the second for a transverse lie with prolapse of the cord in early labour. The other usual indications for Caesarean section are severe pre-eclamptic toxaemia and placenta praevia. The comparative percentage figures in other series are shown in Table III.

TABLE III. CAESAREAN SECTION IN TWIN PREGNANCIES (%)

Munnell and Taylor[5] (1946)	3·3
Potter and Fuller[8] (1949)	5·9
Bender[7] (1952)	4·4

The management of delivery in twin pregnancy following a previous Caesarean section is of some interest. In multiple pregnancy the uterus is usually over-distended and the risk of scar rupture may be increased.[13] Repeat section therefore seems justifiable in near-term twin pregnancies.

SUMMARY

1. Attention is drawn to the apparent difficulty in the diagnosis of twin pregnancy. The use of radiographs is discussed.

2. Since prematurity is the major factor in the high foetal mortality, the importance of early admittance to hospital between the 30th and 34th week, as a prophylatic measure, is emphasized.[6] This is especially advisable in the low-income group.

3. The importance of being adequately prepared for twin labour is stressed. This entails the presence of an anesthetist at the delivery.

4. The particularly high incidence of postpartum haemorrhage in the Addington Hospital series is noted. This incidence can be reduced by the prophylactic administration of ergometrine at the end of the second stage of labour.

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