

# *Symphysiotomy for mild cephalo-pelvic disproportion*

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The operation of symphysiotomy was first performed by Claude-De La Corvee in 1655 on a recently dead patient (Munro Kerr and Chassar Moir 1956). Signault (quoted by Greig 1964) performed the first modern operation in 1777 on a patient who had a true conjugate of 6.5cms., and who had had 4 previous stillbirths. He obtained a live healthy baby but the mother unfortunately suffered from a urinary fistula for the rest of her life.

For the next hundred and fifty years the operation enjoyed several brief periods of popularity in Europe, but because it was performed on patients with gross pelvic contraction the inevitable urinary complications of damage to the bladder, urethra and vestibule followed. The incidence of haemorrhage and sepsis was also very high, and the operation never gained general acceptance.

In 1931 Zarate (1955) revived the operation with his technique of subcutaneous, partial or intracapsular symphysiotomy. Subsequently, Spain (1949) and Barry (1950, 1952) further popularized the operation in Ireland with their open technique. Barry (1950) declared that 'symphysiotomy offers a cure for disproportion, not a treatment.' Crichton and Seedat (1963) exhaustively evaluated the operation as a method of managing cases of mild cephalo-pelvic disproportion and reported on 1,200 cases with excellent results.

## **Indications.**

According to Greig (1964) the ideal indication for symphysiotomy is the engaged head arrested by mid-pelvic or outlet contraction. However, Crichton and Seedat (1963), Seedat and Crichton (1962), Bird and Bal (1967), Zarate (1955), Barry (1952) and Spain (1949), used it mainly for disproportion. Crichton and Seedat (1963) give a lower limit of 8cms. for the true conjugate. In a series of 1,200 cases 4 (0.3%) patients developed vesico-vaginal fistulae and 12 (1%) had severe vestibular tears (Crichton and Seedat 1963). In all of Spain's 40 cases the true conjugate was above 9cms. and one case (2.5%) developed severe stress incontinence (Spain 1949). Barry (1952) mentions 8.5cms. as a lower limit for the true conjugate. In his series of 42 cases 2 (4.7%) developed vesico-vaginal fistulae. Zarate performed the operation on pelvis with a true conjugate of between 8 and 10cms. (Zarate 1955).

Symphysiotomy has been used for difficult breech deliveries where disproportion between the head and the pelvis has been anticipated. We agree with Greig (1964) that the operation is not suitable as a planned method of breech delivery because of the high risk of vestibular lacerations should intravaginal manipulations become necessary. There is however a place for symphysiotomy

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as an emergency measure to deliver the arrested after-coming head in cases with unanticipated disproportion.

Although the operation has been recommended for cases of engaged brow and face presentations, engaged brow and face presentations are very rarely encountered in African patients and it is inadvisable to perform the operation in cases of unengaged brow and face presentations.

In developing countries, in addition to these indications the following non-obstetrical factors should be considered.

Because the operation can be done in the labour ward under local anaesthesia theatre time, space, staff, and anaesthetic staff are not required. In most hospitals in developing countries the theatre and anaesthetic departments are overworked and understaffed so any relief of pressure from the obstetric department is desirable.

Although Caesarean section is the ideal and accepted method of treating cephalo-pelvic disproportion in developed countries, in developing countries, it is risky and hazardous to future pregnancies. The pregnant women in such developing countries is not yet as hospital conscious as her European counterpart and it is not unusual for her to come to hospital as a last resort when all else has failed at home. Cases of Caesarean section tend to put themselves at risk in subsequent pregnancies by not coming to hospital in early labour with the resulting increase in maternal morbidity and mortality from rupture of the scar. Lucas et al. (1968), discussing labour following previous Caesarean sections at this hospital reported a rupture rate of 3 out of 31(9.6%) classical scars and five out of 232(2.1%) lower segment scars.

The main causes of maternal death associated with Caesarean section are haemorrhage and shock. In England and Wales (Confidential Enquiries 1963) between 1958 and 1960 these caused 57 deaths, 32 (56.1%) of which were considered avoidable.

There are thus many reasons for avoiding, if possible, Caesarean section in developing countries. Lawson and Stewart (1967) state that the "approach to Caesarean section in the tropics must be conservative." Symphysiotomy provides a means of lowering the Caesarean section rate and with it the immediate maternal mortality and morbidity. The number of labours following Caesarean sections with the attending hazards is reduced and also the risk of ruptured uterus in subsequent pregnancies as the pelvis remains permanently enlarged (Lawson and Stewart 1967).

In the tropics anaemia is very common especially in pregnant women. In addition patients are often dehydrated and exhausted from prolonged labour at home.

These factors and the frequent difficulty in getting stored blood predispose to a high morbidity and mortality following Caesarean section.

### Material

It was with the above indications in mind that we at Lusaka Central Hospital decided on a programme of symphysiotomy as a method of treating cephalo-pelvic disproportion. We place the lower limit for true conjugate diameter at 9.5cms. 75 cases are presented covering a period of 18 months. The patients were submitted to trial of labour after clinical examination on admission had suggested mild to moderate cephalo-pelvic disproportion. The pelves encountered at this hospital are usually of the generally contracted platypelloid type with a rounded fore-pelvis and a prominent promontory. The average true conjugate is 10.5 cms.

Two-thirds of the patients were between 15—20 years of age and the rest were between 21—30 years. 56 patients (74.6%) were primigravidae and 10 cases had had a previous difficult labour. The rest had had 2 to 5 deliveries previously.

63 symphysiotomies were for brim disproportion, 10 for outlet and cavity disproportion and 2 were for delivery of the aftercoming head in breech deliveries. Symphysiotomy was done at three quarters or more dilatation of cervix, where labour had failed to progress or where difficulty was encountered at full dilatation of the cervix. Vacuum extraction was used in 66 cases in the second stage, or at three-quarter dilatation of the cervix because of maternal and, or, foetal distress. In 7 cases spontaneous delivery occurred following symphysiotomy. The average duration of labour was 24 hours.

### Technique of Operation

The method followed is similar to that described previously. (Seedat and Crichton 1962, Crichton and Seedat 1963).

### Post-Operative Care

A self-retaining catheter is inserted immediately after delivery and continuous bladder drainage carried out for 2 days except where haematuria was present before delivery when the catheter is left in for five days.

A firm Elastoplast strapping is placed so as to encircle the trochanteric regions; this is removed two or three days later. For the first two days the patient is nursed on her side. On the third day the patient is encouraged to sit out of bed and ambulation is commenced on the fourth day. The wound drain is removed on the third day.

### Results

There was 1 maternal death due to severe eclampsia, 18 (24%) perinatal deaths occurred. Of these 18, six had had prolonged attempts at vacuum extraction prior to symphysiotomy, and severe foetal distress was already present when the operation was done. In 6 cases patients were admitted in late first stage after prolonged labour at home and with evidence of severe foetal distress on admission. Of these 6 cases, one had severe untreated pre-eclamptic toxæmia and in another case the foetus had died in utero due to prolapse of the cord. In the latter case, the pelvis was grossly contracted and although symphysiotomy was done, delivery had to be completed

by craniotomy. This was a badly selected case as the true conjugate diameter was only 7.5cms. There were 3 other intra-uterine deaths, 1 due to fulminating eclampsia, 1 hydrocephalus resulted in neonatal death, and 1 stillbirth was due to delay in breech delivery. In 2 cases stillbirths followed prolonged periods of vacuum extraction due to inadequate separation of the symphysis (1 case) and poor selection (1 case). The latter had a true conjugate of 7.5cms.

Two cases of failed symphysiotomy occurred which necessitated caesarean section. Of these one was due to in-coordinate uterine action. The other was due to insufficient separation of the symphysis.

The babies weighed between 6 and 8 pounds. Three (4%) cases of post partum haemorrhage occurred. Seven (9.3%) patients developed urinary infection post operatively, and 16 (21.3%) patients developed wound infection. The most common organisms responsible for urinary and wound infection were *B. coli*, *Staph. aureus* and *Ps. pyocyanous*. These infections responded to appropriate antibiotics.

No vestibular tears or vesico-vaginal fistulae occurred in any of our cases. One patient who developed stress incontinence responded to conservative measures.

In 66 out of the 75 cases delivery was immediately completed with the vacuum extractor. In 32 the cervix was fully dilated and in 34 it was more than three-quarters dilated.

The average stay in hospital after symphysiotomy was 10 days. Eighteen patients had to remain in hospital for more than ten days because of urinary infection or wound infection. These were all treated successfully.

None of the patients complained of any difficulty with locomotion at time of discharge from hospital.

### Discussion

According to Sandstein quoted by Greig (1964) a 5cms. separation produces an increment in the true conjugate diameter of between 5 and 11mm., the higher values being consistently found in flat pelves and the lower figure in round or oval pelves. The transverse diameter is increased by 4mm. per centimetre separation. Crichton and Seedat (1963) state that in gynaecoid pelves, every centimetre of separation produces approximately 8% increase in the area of the brim, cavity and outlet. Therefore a 2½cms. separation would produce an increase in area of 20%.

Most of the authors are agreed that too large a separation results in excessive strain being put on the soft tissues, namely the vestibule, with consequent damage to the urethra and bladder. Therefore in modern symphysiotomy, a limit of 5cms. separation has been set. (Spain 1949, Zarate 1955, Barry 1952).

It has been shown (Greig 1964) that disorganisation or subluxation of the sacro-iliac joint does not occur at any degree of pubic separation below 7cms. In our series we attempted to restrict the operation to cases with true conjugate of 9cms. or more and a pubic separation of 2 to 3 cms.

The commonest reported serious post-operative complication was puerperal pyrexia due to urinary infection (Seedat and Crichton 1962, Crichton and

Seedat 1963) and this occurs in 7% (Bird and Bal 1967) to 16% (Seedat and Crichton 1962) of cases. In our series of 75 cases, 7 patients developed urinary infection with *B. coli*. This high rate might be reduced if continuous bladder drainage were carried out for shorter periods.

(Seedat and Crichton 1962) found a high incidence of post partum haemorrhage. Of 62 cases of post partum haemorrhage out of 505 symphysiotomies, 77% were due to uterine atonicity and they suggest that intravenous ergometrine should be given at the birth of the anterior shoulder, and that an infusion of 10 units of Syntocinon in one litre of 5% dextrose in water should continue for an hour after delivery. We followed this advice, and only 3 (4%) of our cases developed post partum haemorrhage.

Vesico-vaginal fistulae and stress incontinence are the most serious long term post operative complications following symphysiotomy, and it is mainly due to them that the operation has earned a bad reputation. However, with the modern operative technique and better selection of cases, these have been much reduced (Seedat and Crichton 1962, Bird and Bal 1967).

It is generally agreed that the operation must not be done unless the cervix is half or more dilated (Zarate 1955, Crichton and Seedat 1963, Bird and Bal 1967). Failure to progress following symphysiotomy may occur due to uterine inertia. However, this usually responds to Syntocinon infusion. Five of our 75 cases developed hypotonic uterine inertia. In-coördinate uterine action as a cause of failure to progress occurred in 2 of our cases. It is very difficult to predict the occurrence of this complication and although it is possible that continuing disproportion may be associated with it, in one of the cases mentioned the disproportion has been relieved, and the foetal head had engaged in the pelvis. No progress occurred in spite of 4 hours of strong but irregular contractions. Conservative measures failed and Caesarean section had to be done.

It is inadvisable to perform the operation unless the foetal head is more than one-fifth in the pelvic brim and with large babies it is also contra-indicated for brow and face presentations. (Seedat and Crichton 1962, Bird and Bal 1967).

Other contra-indications are transverse lie, previous Caesarean Section, and disease or deformity of the pelvis, spine, hips or legs. In the latter cases symphysiotomy has an adverse effect on locomotion.

It is our practice to complete delivery with a vacuum extractor. This does not occupy space in the pelvis, and hence does not cause increased separation of the symphysis, as would forceps. Consequently damage to the vestibule is minimised. The vacuum extractor allows occipito posterior and lateral positions to be managed without recourse to manual or forceps rotation, and can be used before the cervix is fully dilated. However, it is not effective if the cervix is less than three quarters dilated.

Delayed ambulation occurred in one case who developed infection of a retropubic haematoma. Drainage of the pus, together with antibiotic therapy and short-wave diathermy, cured the condition. None of our patients had any ambulation pain or difficulty in walking on discharge from hospital.

Only 20 patients attended for follow up; none of these complained of pain or difficulty with walking, or micturition.

Lasbrey (1963) followed up 151 cases of symphysiotomy over a period of two years found that only 6% developed disabling sequelae, all of whom recovered.

Although our series is small, we feel that with experience and better selection of cases the results could be improved. It is our opinion that there is a definite place for the wider adoption of symphysiotomy for the treatment of mild cephalo-pelvic disproportion in developing Africa.

#### Summary:

The obstetric and non-obstetric indications for symphysiotomy are discussed with special reference to conditions in developing countries in Africa. Complications and contra-indications are reviewed. 75 cases are presented. The maternal mortality due to symphysiotomy was nil. The uncorrected perinatal mortality was 18 out of 75 cases. The incidence of vestibular tears and vesico-vaginal fistulae was nil. There was one case of stress incontinence. The morbidity rate and the incidence of ambulatory difficulties following the operation was minimal.

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