

## SYMPHYSIOTOMY—INDICATIONS AND CONTRAINDICATIONS

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Since 1957, 1,389 symphysiotomies have been performed with our technique<sup>1,2</sup> in the Department of Gynaecology and Obstetrics of the University of Natal at the King Edward VIII Hospital, Durban. Of these, 1,325 were performed in cephalic presentations and 64 for the arrested after-coming heads of breech presentations, as emergency procedures.

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Often individual surgeons report excellent results with a particular technique which cannot be reproduced when the same method is projected into universal practice. In the present series, however, many members of the staff (of whom the minority were specialists) employed our technique and consequently we feel that the procedure has been subjected to a valuable practical evaluation which justifies reliable conclusions.

In short, our technique of symphysiotomy appears to be a safe operation with few sequelae—providing that no

contraindications exist and that the operation is carefully performed. Carelessly done, or if contraindications exist, it may be a mutilating procedure.

**Complications**

The complications that have occurred include:

1. Direct trauma to related structures, either during the operation or during the delivery.
2. Retropubic cellulitis (occasionally even osteitis pubis).
3. Sacro-iliac and symphyseal pain, or pain referred to the groin after delivery. These pains may be associated with ambulatory difficulties, and recur not infrequently in subsequent pregnancies.
4. Possibly, stress incontinence.

Defective clinical judgement is the usual cause of complications. It cannot be over-emphasized that the contraindications to symphysiotomy are more important than the indications, and a purpose of this contribution is to draw attention to the greater conservatism we have learnt to observe since our earlier communications upon this subject.<sup>1,2</sup>

**MECHANICS OF SYMPHYSIOTOMY**

The indications for and contraindications to symphysiotomy can only be appreciated fully if the surgeon possesses a sound knowledge of the mechanical consequences of the operation.

The pelvis may be compared to 2 ellipses hinged anteriorly at the symphysis pubis and posteriorly at the sacro-iliac joints. When the symphysis is divided, the ellipses separate anteriorly, hinging upon the sacro-iliac joint posteriorly. This is depicted diagrammatically in Fig. 1.

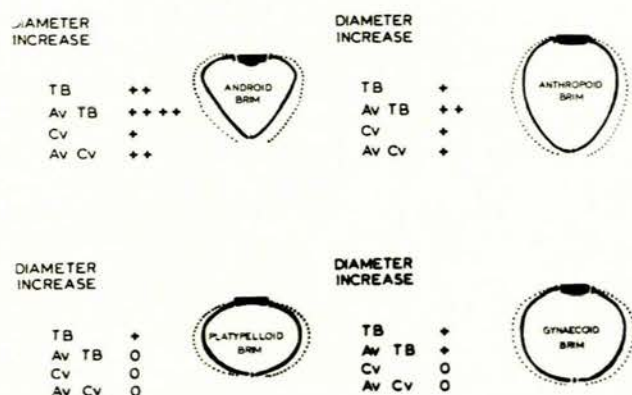


Fig. 1. Effects of symphysiotomy upon different pelvic shapes.

from which it is apparent that only the transverse diameters of the pelvis increase appreciably following upon symphysiotomy.

This increase in size is not identical at all levels of the pelvis, for the inferior aspects of the symphyseal and sacro-iliac joints separate more than the superior aspects. It follows that the outlet diameters are increased more than the brim diameters, and this fact gave rise to the fallacy that symphysiotomy was beneficial only in outlet dispo-

portion. The changes in question are illustrated diagrammatically in Fig. 2.

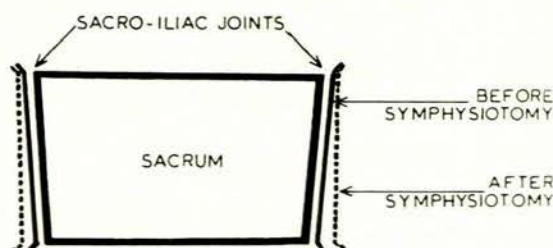


Fig. 2. Effects of symphysiotomy on sacro-iliac joints (viewed anteriorly). Greater separation anteriorly and inferiorly due to 'hinging' and shape of articular surfaces.

While the actual increase in brim 'size' resulting from symphysiotomy is of obvious importance, it is not generally appreciated that the conversion of an unfavourable to a favourable pelvic 'shape' (with consequent elimination of 'waste space') is often equally, and occasionally of even greater importance. Thus, where there is any 'waste space' (especially anteriorly) symphysiotomy will lead to a marked increase in the 'available' diameters—both conjugate and transverse.

It is therefore apparent that symphysiotomy will be of greatest value where there is 'beaking' of the fore-pelvis. This is shown diagrammatically in Fig. 3 and can best be assessed by abdominal palpation, employing the method previously described by one of us (D.C.).<sup>3</sup>

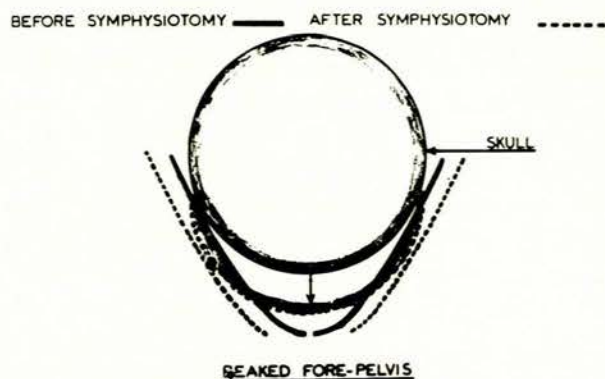


Fig. 3. Effect of symphysiotomy upon beaked fore-pelvis (reduction of waste space by increase in available conjugate diameters).

In practice, therefore, symphysiotomy will be of greatest value in the android, anthropoid and 'Otto' types of pelvis, and of lesser value in the gynaecoid and especially in platypelloid pelvis where there is no anterior 'waste space'. These brim changes are shown diagrammatically in Fig. 4.

Similar reduction of 'waste space' occurs at the outlet and inspection of Fig. 5 will show how a narrow Roman arch is converted to a wide Gothic arch with elimination of the anterior 'waste space'.

Other effects of symphysiotomy are also important. Symphysiotomy results in an opening up of the symphyseal and sacro-iliac joints with impaired stability of the pelvis until healing has occurred. Further, with symphyseal sepa-

ration and section of the arcuate ligament, there is loss of the supports of the bladder neck and urethra, and the triangular ligament and soft tissues of the anterior vagina are put on tension. This is unimportant, providing that an adequate episiotomy prevents pressure on the anterior vagina and that delivery can be carefully controlled. A cooperative patient is therefore a *sine qua non*.

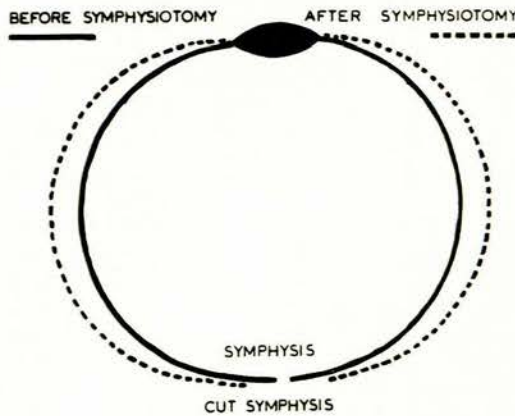


Fig. 4. Effects of symphysiotomy on pelvic brim (viewed from above).

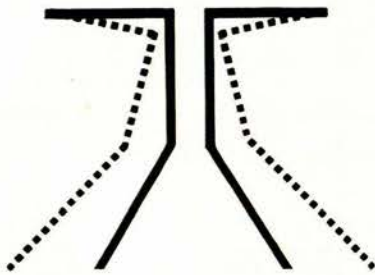


Fig. 5. Effects of symphysiotomy on sub-pubic angle. Greater inferior separation with conversion of narrow 'Roman' SPA to wide 'Gothic' SPA, thereby reducing waste space for foetal head.

#### CONTRAINDICATIONS TO SYMPHYSIOTOMY

On general principles and based upon our experience we recommend that symphysiotomy be contraindicated in:

1. Uncooperative patients.
2. Patients in whom an abnormal strain may be placed upon the sacro-iliac joints or symphysis pubis during healing (for instance in obese patients, and patients with kyphosis or an abnormal gait).
3. Patients with pelvic bone or joint disease which is likely to be aggravated by symphysiotomy (for instance, patients with a history of sacro-iliac strain or patients over the age of 30 with possible ankylosis of the sacro-iliac joints).
4. When excess separation is required—as with gross cephalo-pelvic disproportion—for this might strain the sacro-iliac joints and place the anterior vaginal tissues under excess tension.
5. When excess tension may be placed upon the anterior vaginal tissues (for instance when there is

inability to perform an extensive episiotomy or when there may be a need for vaginal manipulations, e.g. forceps, or manual manipulations required for the correction or delivery of malpresentations).

6. Patients who have previously undergone major reparative vaginal surgery.
7. Although stress incontinence is not a proven complication, it might be wise to be less enthusiastic about symphysiotomy in races who are more prone to stress incontinence than the Bantu (among whom stress incontinence is rare).
8. A scarred uterus.
9. Cases in which the possibility of a laparotomy in the immediate future exists, e.g. suspected rupture of the uterus or proposed puerperal tubal ligation.
10. A limited obstetric future, e.g. elderly or infertile patients or patients who have had more than 3 deliveries.
11. A cervix less than 4-fingers dilated.
12. A pelvis so small that, despite symphysiotomy, subsequent labours are likely to end in caesarean section.

The most difficult of all these contraindications to assess, is the degree of disproportion. Intrapartum cephalo-pelvi-metry (using Chassar Moir's<sup>4</sup> and Crichton's<sup>5</sup> methods) is most useful, if readily available.

Clinically it has been found that the case is unsuitable for symphysiotomy if:

- (i) More than three-fifths of the head is above the brim with slight moulding, or more than two-fifths above with marked moulding.
- (ii) If the obstetric conjugate is less than 9.0 cm. or the available transverse diameter of the brim is less than 10.0 cm.
- (iii) If the estimated weight of the foetus is less than 6 lb. or more than 8 lb.

#### INDICATIONS FOR SYMPHYSIOTOMY

Having outlined the contraindications, what then are the indications? These may be classified according to whether:

1. Symphysiotomy is to be performed as an alternative to caesarean section—'elective' symphysiotomy.
2. Symphysiotomy is to be performed because caesarean section is not feasible—'emergency' symphysiotomy.

For an 'elective' symphysiotomy, the patient is suitable if: (a) disproportion is exerting a harmful effect, and (b) no contraindications are present.

For an 'emergency' symphysiotomy, some of the contraindications may be waived on the basis of a carefully calculated risk to mother and infant. The main indications in such cases are: (i) difficulty with the after-coming head of a breech; (ii) the patient's general condition is such that a major abdominal operation, with or without general anaesthesia, constitutes the alternative greater risk; (iii) when the delay involved in effecting delivery by caesarean section would result in the death of the infant or rupture of the uterus. Existing rupture of the uterus, however, constitutes an 'absolute' contraindication to symphysiotomy; for vaginal delivery of the foetus and removal of its tamponading effect from the site of rupture, may be followed by a fatal haemorrhage.

## CLINICAL ASPECTS OF SYMPHYSIOTOMY

Symphysiotomy has not yet been shown to have fewer sequelae than caesarean section. Its main advantages are:

1. The uterus is left unscarred.
2. A major abdominal operation (usually augmented by the hazards of a general anaesthetic) is avoided.
3. Many subsequent normal vaginal deliveries may occur, because the pelvis is enlarged.
4. Delivery can be effected far more quickly than is possible by caesarean section.

Symphysiotomy will cure minor and moderate disproportion—but nothing else. It will not cure cervical stasis due to a 'primary' inefficiency of uterine action. Thus if cervical stasis is purely 'secondary' and consequent upon disproportion, then it will respond to symphysiotomy. On the other hand, if cervical stasis is 'primarily' due to uterine inefficiency, symphysiotomy may fail to correct the abnormality and caesarean section may be required. To prevent such a possibility, symphysiotomy should not be performed for disproportion unless the cervix is at least 4-fingers dilated.

Symphysiotomy is a useful emergency treatment when disproportion prevents the safe delivery of the after-

coming head of a breech presentation. Although we do not recommend that an elective breech labour should be conducted with this in mind, it is our routine to infiltrate the symphyseal area with local anaesthetic in emergency breech deliveries so that the symphysiotomy (if required) can be performed in time to be life-saving to the infant.

## SUMMARY AND CONCLUSIONS

This report constitutes a reappraisal of our technique of symphysiotomy.<sup>1,2</sup> To date 1,325 symphysiotomies have been performed for vertex deliveries and 64 performed for arrested after-coming heads in 'emergency' breech deliveries by numerous members of staff.

Our increasing knowledge of this operation has enabled us to define the indications and contraindications to the operation more precisely, as described in this communication.

We wish this contribution to be a tribute to the efficiency of our registrars who perform the majority of symphysiotomies in our unit, and to thank Dr. H. Wannenburg, Superintendent of King Edward VIII Hospital, for access to case records.

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