1 Introduction

One-third to nearly all women in some countries in the developed world are likely to require repair of perineal trauma after vaginal birth (70% in the UK). The majority of these women experience perineal pain or discomfort in the immediate postpartum period. Even 3 months later, as many as 20% still have problems such as pain during intercourse, which can be related to perineal trauma and its repair. This can lead to major physical, psychological, and social problems, and can affect the woman’s ability to care for her newborn infant and other members of her family. It has been linked with marital breakdown. There is much postpartum maternal morbidity that women never report to health professionals.

2 Technique of perineal repair

Perineal trauma is most commonly repaired in layers. The vagina may be repaired with a continuous suture or (less commonly) with interrupted sutures. In theory, a continuous stitch might ‘concertina’ the vagina and for this reason, a locking stitch is usually recommended. The deeper perineal tissues are usually closed with interrupted sutures but sometimes continuous ‘running’ sutures are used. The skin may be closed with interrupted transcutaneous sutures or a continuous subcuticular suture, using an absorbable material, may be used. A technique using loose continuous sutures throughout has been
described. Another approach, to simply appose the deeper tissues with no separate suturing of the skin, has been found to result in satisfactory healing with less pain and dyspareunia at 3 months than alternative suturing techniques.

In addition to the nature and extent of the trauma, the technique of repair and the choice of suture material will have a bearing on the extent of morbidity associated with perineal trauma. A variety of techniques and suture materials are in current use, and there is little consensus as to which are best.

The evidence from randomized trials is that women allocated to perineal repair with continuous subcuticular sutures, experienced less pain and used less analgesia in the immediate postpartum period than those repaired with interrupted sutures. No substantial differences between the two techniques were found with respect to long-term pain or pain during intercourse. Midwives and students are usually taught to suture using the interrupted technique because it is considered easier to learn and less liable to cause problems in the hands of inexperienced or novice operators.

3 Choice of suture material

Trials comparing the use of absorbable sutures (Dexon) with non-absorbable skin sutures (silk, nylon, or Supramid), show that the groups repaired with absorbable sutures generally had less pain and used less analgesia in the first few days after delivery. They were also less likely to require resuturing. No clear differences were noted on other longer term morbidity, although women commonly reported the need for removal of some absorbable material in the 3 months after delivery.

The absorbable materials most commonly used for perineal closure are polyglycolic acid (Dexon, Vicryl) and chromic catgut. The use of polyglycolic acid sutures results in less short-term pain and less use of analgesia than chromic catgut. In the one trial that included an adequate follow-up after discharge from hospital, both perineal pain and pain during intercourse were equally common in the two groups 3 months after delivery. There was less dyspareunia at 1 year in the polyglycolic acid group.

Removal of some suture material was reported more frequently after the use of polyglycolic acid sutures than with chromic catgut sutures. This was particularly marked in the first 10 days but persisted up to
3 months postpartum. The commonest reasons given were ‘irritation’ and ‘tightness’. The number of women requiring resuturing was small but this occurred more frequently after suturing with chromic catgut than with polyglycolic acid.

In summary, the evidence suggests that polyglycolic acid sutures cause less pain than chromic catgut in the immediate postpartum period but may cause irritation sufficient to lead to the removal of some suture material in an important minority of women. Catgut is reported to cause an inflammatory response in the tissues, due to the fact that it is broken down by proteolytic enzymes and phagocytosis. Polyglycolic acid sutures cause less tissue reaction. This may explain why their use is associated with less pain in the immediate postpartum period. Another suggested explanation for the trial findings is that they reflect differences in the tightness of the stitches rather than differences in the materials per se.

Glycerol-impregnated catgut has also been compared with chromic catgut, both materials being used for all layers. In the better conducted trial, the use of glycerol-impregnated catgut was associated with more pain 10 days after delivery and with a higher frequency of pain during intercourse 3 months postpartum. The increased prevalence of pain during intercourse persisted and was reported nearly twice as commonly 3 years after delivery by women sutured with glycerol-impregnated catgut. On the basis of these findings, glycerol-impregnated catgut sutures should not be used for repair of perineal trauma.

Of the non-absorbable materials, polyamide sutures, such as nylon or Supramid, would be expected to cause less pain than silk because they cause less tissue reaction and pass more easily through the tissues. Handling and knotting polyamides is less easy, however. They tend to be stiff and have a ‘memory’, and they thus require three or four throws in a knot. The handling properties of silk, on the other hand, are probably the best of all suture materials; it knots easily and securely. These latter characteristics almost certainly explain silk’s continuing popularity for perineal repair, despite the fact that it results in increased discomfort.

A tissue adhesive, Histoacryl, has been compared to chromic catgut sutures in one trial. It suggested excellent results in terms of reduced pain and analgesic use in the 48 hours after delivery. This approach is a promising development but there is no information about long-term outcome and the single trial does not provide adequate evidence to introduce Histoacryl into practice.
4 Who should perform the repair?

It is likely that the skills of the operator are as important, if not more important, than the materials and techniques used. There is, however, little research evidence on the effects of skill on symptoms associated with perineal repair. Experience does not necessarily result in a better outcome – the same mistakes may be made with increasing confidence. There is an urgent need for this to be clarified in respect of the repair of perineal trauma.

Perineal repairs are often delegated to a junior or trainee obstetrician, or midwife. Training is likely to have an important effect on the outcome of perineal repair and is often considered inadequate. The approach often is ‘see three, do three, and now you are on your own!’ Video recordings have been introduced in some units to supplement this, and apparatuses on which to practice suturing are becoming available. Ideally, the usefulness of these developments should be carefully assessed before they are introduced widely.

5 Episiotomy breakdown

Episiotomy breakdown is a rare but unpleasant complication. One trial has compared a policy of primary resuturing plus antibiotic cover with wound cleansing and expectant treatment. Women managed with primary resuturing spent less time in hospital and made fewer visits to the hospital as outpatients. They resumed sexual intercourse sooner and intercourse was more likely to be pain-free. In the resutured group, 4 women out of 20 had a ‘superficial rupture’ but none suffered serious wound breakdown.

The results of this single trial are not definitive but they suggest that serious consideration should be given to primary resuturing (with antibiotic cover) following rupture of perineal trauma during the puerperium.

6 Conclusions

A continuous subcuticular stitch is preferable to interrupted transcutaneous sutures for episiotomy skin closure because it results in less short-term pain, without any clear difference in the long term. On balance, absorbable sutures are preferable to non-absorbable material for skin closure.
On the basis of currently available evidence, polyglycolic acid sutures (Dexon or Vicryl) should be chosen for both the deep layers and the skin. Questions still remain about the long-term effects of polyglycolic sutures but the available evidence is reassuring. The relatively frequent need to remove polyglycolic acid material in the puerperium because of irritation indicates either that this material is not ideal or that the stitches were tied too tightly. The option of a two-layer approach, leaving the skin unsutured, looks promising but needs further evidence from good-quality trials before it is widely adopted. Whichever material is chosen for the skin, polyglycolic acid currently appears to be the material of choice for the deeper tissues. However, in under-resourced settings, cost may be a barrier to its use.

Further research is required to evaluate the differential long-term effects of various suture materials and techniques, and to confirm or refute the suggested benefits of primary repair as opposed to conservative management when perineal trauma ruptures during the puerperium.

Sources

Effective care in pregnancy and childbirth
Grant, A.M., Repair of perineal trauma after childbirth.

Cochrane Library
Kettle, C. and Johanson, R.B., Continuous versus interrupted sutures for perineal repair.
Absorbable synthetic versus catgut suture material for perineal repair.

Pre-Cochrane reviews
Polyglycolic acid vs nylon for perineal repair. Review no. 03693.
Polyglycolic acid vs silk for perineal repair. Review no. 03794.
Povidone iodine prior to perineal suturing. Review no. 05574.
Primary resuturing vs expectancy for ruptured episiotomy. Review no. 07017.
Histoacryl vs chromic catgut for perineal skin closure. Review no. 07056.
Other sources


