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Episiotomy repair: vicryl versus vicryl rapide

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SUMMARY

Women suffer a significant degree of perineal morbidity in the postpartum period. For some, it can be significant and interfere with daily activities. Although there seems to be no doubt that polyglycolic acid derivatives are superior to non absorbable sutures with regard to wound healing, problems still occur with their use. In this study a relatively new product, Vicryl rapide, was compared with Vicryl.

INTRODUCTION

Episiotomy is the surgical enlargement of the vaginal orifice during labour and delivery and remains a very common operation in obstetrics.[1] The practice was introduced in the 18th century without having strong scientific evidence of its benefits.[2] Its use was justified by the prevention of severe perineal tears, better future sexual function and a reduction of urinary and faecal incontinence. However, no data support any short or long term benefits of routine episiotomy in obstetric practice.[3]

Currently used suture materials are either absorbable or non-absorbable. Absorbable materials include polyglycolic acid, chromic catgut and glycerol-impregnated catgut; non-absorbable materials include silk and nylon. Of the absorbable suture material, polyglycolic acid derivatives (Dexon/Vicryl) degrade hydrolytically, causing minimal tissue reaction and inflammation. However, absorption is not complete until 56-70 days post repair.

A relatively new material, Vicryl rapide (VR), consists of smaller molecules of the same components as coated Vicryl (V) and changes to the manufacturing process give Vicryl rapide its unique characteristics. Vicryl rapide absorbs more quickly than other absorbable materials and absorption is essentially complete by 42 days. At five days post implantation, the tensile strength is reduced by 50% and after fourteen days there is no traction left.

This study was designed to investigate whether mothers with a perineal tear or episiotomy sutured with Vicryl rapide experienced less pain in the post-partum period and less morbidity long-term with regard to wound healing, urinary and bowel habit and sexual function than those patients sutured with Vicryl.

MATERIALS AND METHODS

Women attending the Ulster Hospital, Dundonald, were eligible to enter the trial if they had a parity of 0 to 2, were between 18 and 40 years old, carried a singleton fetus, had a normal vaginal delivery and required an episiotomy, or sustained a second degree tear (skin and perineal muscle). Enrolment took place immediately after delivery and informed consent was obtained. Block randomisation was performed using two sets of sealed envelopes. Questionnaires were completed by the doctor or midwife present at the delivery. All episiotomies were repaired by the same technique using one suture length and subcuticular perineal sutures.[4] All women received a diclofenac suppository (100 mg) per rectum on completion of the repair.

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From 1 February to 31 July 1996, 153 women were recruited into the trial, and of these 118 completed follow-up at six and twelve weeks. Seventy-eight repairs were completed with Vicryl and 75 with Vicryl rapide. In the Vicryl group, 44 patients were primigravid and 34 patients were multiparous; in the Vicryl rapide group, 40 patients were primigravid and 35 multiparous.

All patients were interviewed at 24 hours postpartum, and interviewed and examined on day three. Principal outcomes studied were perineal pain, pelvic floor functioning and wound integrity. Perineal pain was assessed at 24 hours postpartum by patients registering their perception of pain on a visual analogue scale (VAS) and by enumerating all pain medications received during days one to three. On day three perineal pain was assessed using a 4-point scale. At six and twelve weeks, patients were contacted by telephone regarding the resumption of sexual activities and difficulties encountered. The general practitioner or obstetrician performed the six-week check-up with regard to poor healing, infection and residual sutures.

Statistical analysis was performed on these results and means compared using Student's t test. In view of the large numbers, the t-test in such instances resembles a z-test. Thus values of 2.0 or more are as statistically significant as $p < 0.05$.

RESULTS

Using the VAS no difference in perineal pain was noted between V and VR at 24 hours (t-value 0.106). On day three, the type of suture material used created no significant difference in the pain score (t-value 0.813). Prior to discharge, no significant difference in the analgesic requirements between the two groups was noted (t-value 1.259).

However, at six weeks, a significant difference in dyspareunia scores between the two groups was noted. The VR group experienced considerably less pain than the V group. The difference in the mean scores was statistically very significant (t-value 3.854). Thirty percent of patients sutured with V experienced wound problems (infection, gaping wound, pain or residual material requiring removal), compared with 1.7% of VR patients.

At 12 weeks, 20% of V patients had dyspareunia (mean dyspareunia score was 0.27) and only 5% of VR patients complained of dyspareunia (mean score 0.05). This was statistically significant (t value 2.440). Of the 19 patients with wound problems at 12 weeks (infection, gaping wound, pain or residual material requiring removal), 18 were in the V group.

DISCUSSION

A significant number of mothers experience some perineal pain or discomfort in the immediate post-partum period but even months later as many as 20% continue to have problems related to perineal repair.[5] For 10% of these women, problems persist up to one year.[6] Symptoms commonly experienced include short and long term pain, wound infection, wound breakdown and dyspareunia. The choice of suture material has a direct effect on perineal outcome and associated morbidity.[7,8] Grant,[4] concluded that, based on the published experimental data on perineal suturing, the choice of polyglycolic acid for all layers with a subcuticular suture to the skin seemed a preferable policy.

Although there seems to be no doubt that polyglycolic acid is the preferable suture material, there are still problems associated with its use. Coated Vicryl offers effective wound support for up to 30 days and then gradually absorbs. This is longer than would normally be necessary and there is often a need to remove polyglycolic acid material in the puerperium. This may explain why women often experience discomfort and tightness in the postpartum period.

In view of this, we decided to perform this study and ascertain whether mothers sutured with Vicryl rapide experienced less postpartum morbidity than mothers sutured with Vicryl. A similar study by Gemynthe *et al*[9] compared the outcome in those sutured with Vicryl to those sutured with Vicryl rapide. At 48 hours, five days and three months after delivery there was no difference in pain and discomfort in the perineal area between the two groups. At 14 days, mothers sutured with Vicryl rapide experienced significantly less perineal pain and discomfort when walking. The difference in terms of women undergoing removal of stitches or visible stitches at examination two months after delivery was not statistically significant although the rate was higher in women sutured with Vicryl. The difference in pain when walking was explained by the dissimilar tensions at that time which would support the hypothesis based on the physical properties of the Vicryl rapide i.e. at 14 days there is no tensile strength

left whereas in Vicryl there is over 50% tensile strength still present.

In our study no difference was noted in pain levels between the two groups in the initial post-partum period. However, by six weeks those in the VR group experienced considerably less dyspareunia. By 12 weeks the difference between the two groups had diminished but was still statistically significant. Interestingly the average scores in both groups were very small.

Only one patient repaired with VR complained of a wound problem at 12 weeks compared with 18 in the V group. Even assuming that the pain experienced at 12 weeks was not due to the suture material, if this potential bias is fed back to the six week analysis using a regression technique, the difference between the two groups is still very significant.

Our results indicate a clear advantage with regard to decreased incidence of dyspareunia at six weeks in patients sutured with Vicryl rapide compared to those sutured with Vicryl. In addition, with regard to wound problems, our results, although statistically not significant, suggest clinical benefit in those patients sutured with Vicryl rapide.

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