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# COMPARITIVE STUDY OF EPISIOTOMY REPAIR USING ABSORBABLE SYNTHETIC VERSES CHROMIC CATGUT SUTURE

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**Abstract:**

**Aim of Study**: The aim of our study is to compare the effect of suture materials- chromic catgut and absorbable synthetic material with respect to pain, analgesic requirement, wound dehiscense. **MATERIAL AND METHODS:** The present study was carried out in the Dept. of OBGY- at Shri Vinoba Bhave Civil Hospital, Silvassa from last 2 years. All women in the reproductive age group, who had a normal vaginal delivery, requiring an episiotomy, were included in the study. All participants were interviewed at 48hrs, 7days, 15days, 6 and 12 weeks regarding perineal pain perception, analgesic requirement and dysparuenia. Local examination was done for nature of healing. Perineal pain was assessed by patients registering their pain perception on a visual analogue scale. At six weeks, patients were reviewed for any wound dehiscence, infection and residual suture material. At twelve weeks patients were assessed regarding the resumption of sexual activity and the difficulties encountered with it. The main focus is on outcome measures relating to short and long term postpartum morbidity. **RESULTS**: In chromic catgut group 23 patients reported moderate pain while in 81 patients in absorbable synthetic material group reported moderate pain at 48 hours. Statistically it was highly significant CI; 45.3165 to 67.6580, $P < 0.0001$. In chromic catgut group 77 patients reported severe pain while in 19 patients in absorbable synthetic material group reported severe pain. Statistically it was also highly significant CI; 45.3165 to 67.6580, $P < 0.0001$. 49 % of patients in the catgut group reported mild pain while one patient in the study group reported mild painat 15$^{th}$ day. 23% of the patients in the control group required analgesic at 15$^{th}$ day. No patient experienced pain at 6 weeks in both the group. CONCLUSION: Short term pain and analgegia was significantly reduced in synthetic absorbable suture group as compared to chromic catgut group and positively shows the advantage of synthetic suture material over chromic catgut. Therefore absorbablemay be considered in place of chromic catgut for episiotomy repair.

## INTRODUCTION

Perineal tear is common following spontaneous or assisted vaginal delivery. Some of the tears does not require active intervention like suturing, but those due to episiotomy or significant perineal lacerations usually need repair. Risk factors associated with perineal trauma or episiotomy includes: first vaginal delivery, fetal macrosomia, operative vaginal delivery, and malpresentation and malposition of the fetus. Others risk factors include race or ethnicity abnormal collagen synthesis, poor nutrition and age[i], [ii], [iii]. Ould, in 1741 suggested first surgical opening of the perineum for prevention of severe perineal tear[iv]. Perineal trauma affects the physical, mental and social well-being of the mother after delivery. Most women suffer short term perineal pain and around 20% have long term problems like dyspareunia[v].

Episiotomy is the surgical procedure of the vaginal orifice by making an incision of the perineum during the last part of the second stage of labour or delivery. This procedure is done with scissors or scalpel and requires repair by suturing[vi].Rates of episiotomy increased during

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the first half of this century as there there was also an increasing move for women to give birth in hospital and for physicians to become involved in the normal uncomplicated birth process. Various reported rates of episiotomies vary from as low as 9.70% in Sweden to as high as 100% in Taiwan[vii].

Beneficial effects of episiotomy are:1. Reduction in the likelihood of third degree tears[viii] .2. Preservation of the muscle relaxation of the pelvic floor and perineum which lead to improved sexual function, and there is reduced risk of faecal and or urinary incontinence[ix, x].3. An episiotomy is easier to repair and heals better than a laceration as it is a clean cut[xi].

Adverse effect of episiotomy can be, extension of episiotomy either by cutting the anal sphincter or rectum, unsatisfactory anatomical results such as skin tags, asymmetry or excessive narrowing of the introitus, vaginal prolapse, recto-vaginal fistula and fistula in ano[xii], haematoma and increased blood loss, pain and oedema, infection and dehiscence or sexual dysfunction[xiii].

The use of episiotomy still today remains a controversial topic in obstetrics and when it is done, it has to be repaired with an ideal suture material. India being a developing country with poor resources, chromic catgut is being used in most of the government as well as in privateinstitutions and these materials of natural origin may cause more pronounced tissue reaction as compared to synthetic material[xiv]. Studies have shown synthetic suture materials like polyglactin to have less post-natal morbidity compared to catgut but with the risk of increased need for suture removal[xv, xvi]. The aim of our study is to compare the effect of suture materials-chromic catgut and absorbable synthetic material with respect to pain, analgesic requirement, wound dehiscense.

## MATERIAL AND METHODS

In this prospective comparative study two groups of patients were designated one on which chromic catgut was used and the other in which synthetic absorbable sutures were used. In both the group 100 patients each were selected. Written informed consent from all the participants was taken.

The present study was carried out in the Dept. of OBGY- at Shri Vinoba Bhave Civil Hospital, Silvassa from last 2 years. All women in the reproductive age group, who had a normal vaginal delivery, requiring an episiotomy, were included in the study. All participants were interviewed at 48hrs, 7days, 15days, 6 and 12 weeks regarding perineal pain perception, analgesic requirement and dysparuenia. Local examination was done for nature of healing. Perineal pain was assessed by patients registering their pain perception on a visual analogue scale. At six weeks, patients were reviewed for any wound dehiscence, infection and residual suture material. At twelve weeks patients were assessed regarding the resumption of sexual activity and the difficulties encountered with it.The main focus is on outcome measures relating to short and long term postpartum morbidity.

Exclusion criteria was extention of episiotomy incisions by instrumental deliveries , Diabetes mellitus , other metabolic disorders, steroids and immunosuppressant, Severe anemia , Epidural analgesia during labour , ruptured membranes for >24hrs and Patients with foul smelling vaginal discharge.

Statistical analysis was done bu using SPSS software. All data was inserted in the Excel sheet of Windows 2013 version. All results were presented in terms of percentages. Categorical data were compared using Chi Square Test or Fischer's Exact Test if appropriate. Statistical significance was calculated at $p<0.05$.

## RESULTS AND OBSERVATIONS

In this study two groups were included of 100 each. One group with chromic catgut suture and other with absorbable synthetic material. All repairs were performed under local anaesthesia.

**Table 1: Pain at 48 hours**

| Pain At 48 hours | Chromic catgut group | Absorbable synthetic material group | 95% CI, P value |
|---|---|---|---|
| **No pain** | 0 | 0 | |
| **Mild pain** | 0 | 0 | |
| **Moderate pain** | 23 | 81 | 45.3165 to 67.6580, P < 0.0001 HS |
| **Severe pain** | 77 | 19 | 45.3165 to 67.6580, P < 0.0001 |

CI: confidance interval
HS: Highly significant

In chromic catgut group 23 patients reported moderate pain while in 81 patients in absorbable synthetic material group reported moderate pain at 48 hours. Statistically it was highly significant CI; 45.3165 to 67.6580, P < 0.0001. In chromic catgut group 77 patients reported severe pain while in 19 patients in absorbable synthetic material group reported severe pain. Statistically it was also highly significant CI; 45.3165 to 67.6580, P < 0.0001.

**Table 2: Pain at 7 days**

| Pain At 7 days | Chromic catgut group | Absorbable synthetic material group | 95% CI, P value |
|---|---|---|---|
| **No pain** | 6 | 78 | 60.8546 to 79.7045, P < 0.0001 HS |
| **Mild pain** | 34 | 16 | 6.0081 to 29.3749, P = 0.0034 S |
| **Moderate pain** | 41 | 4 | 26.1613 to 47.0963, P < 0.0001 HS |
| **Severe pain** | 19 | 2 | 8.8104 to 25.8978, P < 0.0001 |

In chromic catgut group 6 patients reported no pain while in 78 patients in absorbable synthetic material group reported no pain at 7 days. Statistically it was highly significant CI; 60.8546 to 79.7045, P < 0.0001 HS. 41 patients in chromic catgut group reported mild pain while 16 patients in absorbable synthetic material group reported mild pain. Statistically it was significant 6.0081 to 29.3749, P = 0.0034. In chromic catgut group 41 patients reported moderate pain while in 4 patients in absorbable synthetic material group reported moderate pain at 48 hours. Statistically it was highly significant CI; 26.1613 to 47.0963, P <0.0001. In chromic catgut group 19 patients reported severe pain while in 2 patients in absorbable synthetic material group reported severe pain. Statistically it was also highly significant CI; 8.8104 to 25.8978, P < 0.0001. 49 % of patients in the catgut group reported mild pain while onepatient in the study group reported mild painat 15$^{th}$ day. 23% of the patients in the control group required analgesic at 15$^{th}$ day. No patient experienced pain at 6 weeks in both the group.

**Table 3: Dyspareunia at 3 months**

| Dyspareunia at 3 months | Chromic catgut group | Absorbable synthetic material group | 95% CI, P value |
|---|---|---|---|
| **Present** | 16 | 14 | -8.0538 to 12.0430, P = 0.6928 |

No statistically significant relation was observed in both group regarding dyspareunia at 3 months. No residual suture material was observed in both the groups at 6 weeks.

## DISCUSSION

Whether to use an episiotomy routinely is still a question. But there is evidence to support the restrictive use of episiotomy compared with routine use of episiotomy[xvii].

In our study in chromic catgut group 23 patients reported moderate pain while in 81 patients in

absorbable synthetic material group reported moderate pain at 48 hours. Statistically it was highly significant. Analgesic was given to all the patients. Most of the studies have also shown same results. In Ipswichstudycomparison of polygalctin 910 with chromic catgut for postpartum perineal repair was done in 1780 women and showed the same results with significantly less no of women with synthetic absorbablae material suture pain after 48 hours[xviii]. While in a study by *MahomedK*[xix]trial there was no significant difference between the two groups in short term pain.Greenberg JA et al showed subjects in the fast-absorbing polyglactin group showed statistically significant reduction in uterine cramping pain[xx].

In chromic catgut group 6 patients reported no pain while in 78 patients in absorbable synthetic material group reported no pain at 7 days. Statistically it was highly significant. 41 patients in chromic catgut group reported mild pain while 16 patients in absorbable synthetic material group reported mild pain. Statistically it was significant. In chromic catgut group 41 patients reported moderate pain while in 4 patients in absorbable synthetic material group reported moderate pain at 48 hours. Statistically it was highly significant. In chromic catgut group 19 patients reported severe pain while in 2 patients in absorbable synthetic material group reported severe pain. Statistically it was also highly significant. There was a statistically significant difference for pain perception after 7 days and absorbable synthetic group experienced statistically significant lower pain as compared to chromic catgut group. Kettle C reviewed eight randomized trials and reported the same results comparable with our study[16].

49 % of patients in the catgut group reported mild pain while one patient in the absorbable synthetic group reported mild pain at 15$^{th}$ day. 23% of the patients in the control group required analgesic at 15$^{th}$ day. No patient experienced pain at 6 weeks in both the group. Both group doesn't required analgesics at 6 weeks. these findings were comparable with the study by y Kurian Joseph et al[xxi]. He observed that 100% patients in polyglactin groupdoesn't required analgesics on 42$^{nd}$day as compared to 98% in catgut group.

In our study no residual suture material was observed in both the groups at 6 weeks and sutrures were completely absorbed in both the groups. Shah PK et al[xxii] et al in their study reported that more number of patients in polyglactin group required suture removal than chromic catgut.

No significant difference between the two groups was observed in our study. This is in accordance to the Cochrane systematic review of eight randomized controlled trials by Kettle C and Johanson RB.

The meta-analysis of the data by Kettle and Johanson who included trials provides significant evidence that absorbable suture material (Dexon and Vicryl) is associated with less short term pain, reduction in the use of analgesia and less suture dehiscence which was comparable with our study. However, the long term effects of this material are less clear[16].

## CONCLUSION

Short term pain and analgegia was significantly reduced in synthetic absorbable suture group as compared to chromic catgut group and positively shows the advantage of synthetic suture material over chromic catgut. Therefore absorbablemay be considered in place of chromic catgut for episiotomy repair.

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