ORIGINAL ARTICLE

A COMPARATIVE STUDY OF VICRYL RAPIDE SUTURE VERSUS CHROMIC CATGUT SUTURE FOR EPISIOTOMY REPAIR

Samreena Akhtar Chohan[1], Saima Altaf[2], Kausar Inayat[3], Seemab Zafar[4], Nosheena Shabbir[5], Shehnaz Sheeba[6]

[1]Shaikh Zayed Federal Postgraduate Medical Institute, Lahore, [2]Abbottabad Medical Complex, [3]WMC Abbottabad, [4]AJKMC Muzaffarabad, [5]SKBZ, CMH Muzaffarabad, [6]Fazaia Medical College, PAF Hospital, Islamabad-Pakistan

Background: An episiotomy is a perineal incision performed to facilitate childbirth by enlarging the diameter of the vulvae outflow. This study used vicryl rapide suture, a polyglactin analogue that causes less tissue reactivity and is removed through hydrolysis (as opposed to chromic catgut suture), because long-term complications after episiotomy repair are common. Made of collagen, chromic catgut is broken down by proteolytic enzymes and phagocytosis, which causes an inflammatory response in the tissues. Regarding the better suture material, opinions differ. (Rephrase this paragraph) This study was therefore designed to compare pain at 48 hours and analgesia requirement at 7th day in chromic catgut suture and vicryl rapide suture. The purpose of this study was to determine pain at 48 hours and analgesia requirement at 7th day between vicryl rapide suture and chromic catgut suture. **Methods:** It was a comparative prospective study carried out at Shaikh Zayed Hospital's Obstetrics and Gynaecology Department in Lahore. A non-probability, consecutive sampling technique was applied to divide 206 study participants in two groups, i.e., (n=103) in Vicryl Rapide (Group A) and (n=103) in Chromic Catgut (Group B). **Results**: In this study the mean age of the cases in vicryl rapide group was 28.94±3.50 and in chromic catgut group it was 29.05±3.43. A total of 103 (50%) female were enrolled in Group A and 103 (50%) were enrolled in Group B. In this study pain at 48 hours was found in 33 (32%) patients in vicryl rapide group and 52 (50.5%) in chromic catgut group *p*-value=0.007. Similarly, analgesia requirement at 7th day was found in 2 (1.9%) patients in vicryl rapide group and 26 (25.2%) patients in chromic catgut group with significant *p*-value <0.001. **Conclusion**: This study concluded that vicryl rapide was the best suture material for episiotomy repair, resulting in decreased pain after 48 hours and lesser need for analgesia by the seventh day.

Keywords: Vicryl Rapide; Chromic Catgut; Analgesia; Episiotomy

Citation: Chohan SA, Altaf S, Inayat K, Zafar S, Shabbir N, Sheeba S. A comparative study of vicryl rapide suture versus chromic catgut suture for episiotomy repair. J Ayub Med Coll Abbottabad 2024;36(2):380–2.

DOI: 10.55519/JAMC-02-13427

INTRODUCTION

An episiotomy is a surgical incision made during childbirth that can induce perineal damage.[1] During the last stages of labour, a surgical incision is made in the perineum to assist with birth; this procedure is called an episiotomy.[2,3] Seven distinct types of episiotomies have been recognized.[2] Typically, there is morbidity associated with anterior perineal trauma, which includes injuries to the labia, anterior vagina, urethra, or clitoris. Injuries to the anal sphincter, perineal muscles, or posterior vaginal wall are together known as posterior perineal trauma.[4] A tear can be categorized as first-degree if it solely impacts the skin of the perineum, second-degree if it impacts both the muscles and the skin of the perineum, third-degree if it impacts the anal sphincter complex and fourth-degree if it involves both the anal sphincter complex and the anal epithelium itself. Tears or episiotomies, which can lead to perineum injury and the need for stitches, occur in around 70% of vaginal deliveries performed by women.[5,6] The surgical skill, suture technique, and material choice all play a potential role for short and long-term complications during episiotomy repair.[6,9]

There was a significant decrease in pain in the Vicryl Rapide (VR) group (*p*-value <0.05) compared to the Chromic Catgut (CC) group after 48 hours. Also, after three to five days, only five percent of the women in the VR group required analgesia, compared to fifteen percent in the CC groups.[8] While 80% of women in CC group reported pain, 57.3% of those using VR Suture reported significantly less discomfort, according to a 2018 local study.[7] Subjects in the CC group (52% of the total) and the VR group (21.33% of the total) reported pain within 48 hours (*p*-value < 0.05), according to a local study. On the seventh day, analgesia was needed by 2% of the VR group and 98% of the CC Suture group, according to another local study on primigravida.[9]

The results regarding pain are varied, with reports ranging from 21.33–57.3% and discomfort in CC from 52–80%[6,7], despite the fact that there is data from both local and international sources to support VR.

Additionally, the Chromic Catgut Suture group showed a wide range of analgesic needs, ranging from 15.5–98%.[9] Vicryl Rapide, theoretically is the most ideal suture material available at the moment for episiotomy repair. Various trials have been conducted comparing chromic catgut to various other absorbable and non-absorbable suture materials, but no suture material has yet been shown to be convincingly better than chromic catgut. So, this study was designed to determine pain at 48 hours and analgesia requirement at 7th day between vicryl rapide suture and chromic catgut suture.

MATERIAL AND METHODS

It was a comparative prospective study carried out at Shaikh Zayed Hospital's Obstetrics and Gynaecology Department in Lahore. A non-probability, consecutive sampling technique was applied to divide 206 study participants in two groups, i.e., (n=103) in Vicryl Rapide (Group A) and (n=103) in Chromic Catgut (Group B). The permission for this study was obtained from Shaikh Zayed Hospital's ethical committee. Written Consent was obtained from all the patients who delivered in our hospital and required episiotomy.

Inclusion Criteria: Age 18–35 years. Any parity. Female requiring episiotomies following spontaneous or instrumental deliveries (as per operational definition)

Exclusion Criteria: The women with intrapartum fever (>98.8^0). Anaemic females (hb <11.5). Females with previous perineal surgery other than the primary repair after child birth (on history). All these factors delay wound healing and make patient prone to infection due to low immunity e.g, anaemia. Fever shows intrapartum infection so it cannot differentiate between recent episiotomy wound infection and previous one.

Above table shows the average age of the cases in vicryl rapide group was 28.94±3.50 and in chromic catgut group it was 29.05±3.43. A total of 103 (50%) female were enrolled in Group A and 103 (50%) were enrolled in Group B. The mean BMI, gestational age and parity was 25.86±4.63, 39.19±1.08, and 1.50±0.65 respectively in Group A and 26.50±3.78, 39.16±1.07 and 1.45±0.60 in Group B respectively (Table-1).

In this study pain at 48 hours was found in 33 (32%) patients in Group A and 52 (50.5%) in Group B with significant *p*-value 0.007. Similarly, analgesia requirement at 7th day was found in 2 (1.9%) patients in Group A and 26 (25.2%) patients in Group B with significant *p*-value <0.001 (Table 2).

Table-1: Demographics and clinical parameters

Demographics and clinical parameters			
		Vicryl Rapide (Group A)	**Chromic Catgut (Group B)**
Age (Mean ± S.D)		28.94 ± 3.50	29.05 ± 3.43
Gender	**Female**	103 (50%)	103 (50%)
BMI (Mean ± S.D)		25.86 ± 4.63	26.50 ± 3.78
Gestational Age (Mean ± S.D)		39.19 ± 1.08	39.16 ± 1.07
Parity(Mean ± S.D)		1.50 ± 0.65	1.45 ± 0.60
Living Status	**Urban**	19 (18.4%)	17 (16.5%)
	Rural	84 (81.6%)	86 (83.5%)
Socioeconomic Status	**Lower (<15000 Rs)**	18 (17.5%)	11 (10.7%)
	Middle (15000-50000)	73 (70.9%)	74 (71.8%)
	Upper (>50000)	12 (11.7%)	18 (17.5%)

Table-2: Comparison of Pain and Analgesic requirement in both study groups

Comparison of Pain and Analgesic requirement in both study groups				
		Vicryl Rapide	**Chromic Catgut**	***p*-Value**
Pain at 48 hours	**Yes**	33 (32%)	52 (50.5%)	0.007
	No	70 (68%)	51 (49.5%)	
Analgesia Requirement at 7th day	**Yes**	2 (1.9%)	26 (25.2%)	< 0.001
	No	101 (98.1%)	77 (74.8%)	

DISCUSSION

Even though episiotomy helps a lot of women, it can lead to short-term and long-term complications such as perineal pain from cuts and scarring after the procedure. The purpose of this research was to prove the hypothesis that the vicryl rapide and chromic catgut groups' pain and analgesia needs differed.

Our results showed the average age of the cases in Group A was 28.94±3.50 and in Group B it was 29.05±3.43. In a study carried out by Abdullah *et al.* (2015), it was also found that the average age of cases in the VR group was 24.72±2.33 years, while in the CC group it was 24.76±2.60 years.[9]

According to our findings with a *p*-value of only 0.007, 33 patients (32% of the total) in the VR group and 52 patients (50.5%) in the CC group reported pain at 48 hours. On the seventh day, there was a significant p-value of less than 0.001 and 2 patients (1.9%) in the VR group and 26 (25.2%) in the CC group needed analgesia. After 3–5 days, participants in the VR group reported reduced pain (32.5 vs. 57%), less need for analgesia.8

Additionally, Esa Bose and colleagues found that VR is superior to CC in terms of pain relief.10 Joseph et al. found that women in the VR group experienced less discomfort than those in the CC group. Having said that, the results were not deemed statistically significant (p>0.05).[11] After 48 hours, individuals in Group-B (49.5%) experienced more discomfort with CC following episiotomy repair (p=0.01), according to Syed et al. (2024). The number of people in Group-B who reported needing analgesia on day 7 was much higher (66.0%, n=68) than in Group-A (20.4%, n=21) (p=<0.000). [12]

CONCLUSION

This study concluded that vicryl rapide was the best suture material for episiotomy repair, resulting in decreased pain after 48 hours and lesser need for analgesia by the seventh day.

AUTHORS' CONTRIBUTION

SAC, SA, KI: Conceptualization of the study design, write-up, proofreading. SZ, NS, SS: Data collection, data analysis, data interpretation, proofreading.

REFERENCES

1. Vasileva P, Strashilov S, Yordanov A. Postoperative management of postpartum perineal tears. Wound Med. 2019;27(1):100172.
2. Kalis V, Rusavy Z, Prka M. Episiotomy. Childbirth Trauma: Springer; 2017. p. 69–99.
3. Živković K, Živković N, Župić T, Hodžić D, Mandić V, Orešković S. Effect of delivery and episiotomy on the emergence of urinary incontinence in women: Review of literature. Acta Clinica Croatica. 2016;55(4.):615–23.
4. Frohlich J, Kettle C. Perineal care. BMJ Clin Evid. 2015;2015:1401.
5. Goh R, Goh D, Ellepola H. Perineal tears A review. Australian J General Practition. 2018;47:35–8.
6. Monis B, Fatima T, Qasim R. Comparative Efficacy of Vicryl Rapide Suture Versus Chromic Catgut Suture for Episiotomy Repair. J Society Obstetr Gynaecol Pakistan. 2019;9(3):182–5.
7. Naseer M, Noreen H. Short Term Outcome Measures of Chromic Catgut Versus Vicryl Rapide for Episiotomy Repair. J Society Obstetr Gynaecol Pakistan. 2018;8(4):212–7.
8. Bharathi A, Reddy DBD, Kote GSS. A prospective randomized comparative study of vicryl rapide versus chromic catgut for episiotomy repair. J Clini diagnos Res. 2013;7(2):326-30. Epub 2012/12/24.
9. Abdullah M, Noreen A, Iqbal M, Sohail R. Comparison between chromic catgut and vicryl rapide for analgesia requirement in episiotomy repair in primigravidas. Annals of King Edward Medical University. 2015;21(3):193.
10. Bose E, Samant M, Lal P, Mishra S, Ghosh A. Comparison of impact of polyglactin 910 (Vicryl rapide) and chromic catgut sutures on perineal pain following episiotomy wound repair in eastern Indian patients. Journal of the Scientific Society. 2013 May 1;40(2):95–8.
11. Joseph K, Shantha B, Prakash S. Comparative study of episiotomy repair: Absorbable synthetic versus chromic catgut suture material. Journal of Obestetrics and Gynecology of India. 2008 Nov 1;58(6):495–9.
12. Syed SZ, Akbar M, Akhtar N, Ashraf N, Ashraf A, Manzoor S. Comparison of Vicryl Rapide Versus Chromic Catgut for Episiotomy Repair: Vicryl Rapide Versus Chromic Catgut. Pakistan Journal of Health Sciences. 2024 Jan 31:79–83.

Submitted: May 26, 2024	*Revised: June 16, 2024*	*Accepted: June 18, 2024*

Address for Correspondence:

Samreena Akhtar Chohan, Shaikh Zayed Federal Postgraduate Medical Institute, Lahore-Pakistan
Email: naumanzaib@yahoo.com