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Original Research Article

Comparison of the surgical outcome of seton placement in perianal fistula using Prolene thread and latex glove

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Abstract:

Background: A common anorectal condition linked to recurrence and long-term morbidity is perianal fistula. In order to maintain sphincter integrity and encourage progressive fistula repair, seton placement is frequently utilised. Setons are made of many materials, including as latex gloves and prolene thread, although their relative efficacy is still debatable.

Aim: To compare the surgical outcomes of seton placement using prolene thread and latex glove in patients with perianal fistula.

Materials and Methods: Over the course of a year, an observational study was carried out at Pt. JNM Medical College in Raipur, Chhattisgarh. Group A (Prolene thread seton, n=39) and Group B (Latex glove seton, n=39) comprised 78 patients with perianal fistula diagnoses. Postoperative discomfort, healing time, recurrence, infection, and patient satisfaction were among the parameters evaluated. The independent t-test and Chi-square test were used for statistical analysis. Statistical significance was defined as a p-value of less than 0.05.

Results: The mean healing time was significantly lower in the latex glove group (5.8 ± 1.2 weeks) compared to the prolene group (7.1 ± 1.5 weeks) (p=0.01). Postoperative pain scores were lower with latex glove seton (p=0.03). Recurrence occurred in 10.2% of prolene cases and 5.1% of latex glove cases. Infection rates were slightly higher in the prolene group, though statistically insignificant (p=0.21). Patient satisfaction was significantly higher in the latex glove group (p=0.02).

Conclusion: Compared to prolene thread seton, latex glove seton showed improved postoperative comfort, a quicker healing period, and greater patient satisfaction. Both approaches worked well, however for some patients with perianal fistulas, latex gloves would be a better option.

Keywords: healing time, latex glove seton, perianal fistulas, prolene group, seton placement

Introduction

An improper passage between the anal canal and perianal skin is the hallmark of perianal fistula, a persistent inflammatory disorder. It frequently appears when cryptoglandular infections cause anorectal abscesses. Patients typically exhibit pain, swelling, repeated abscess formation, chronic drainage, and severe discomfort that negatively impacts their quality of life [1]. With the goal of eliminating the

fistulous tract while maintaining anal sphincter function and reducing recurrence, surgical management continues to be the cornerstone of treatment. A number of surgical techniques, including as fistulotomy, fistulectomy, advancement flap, ligation of the intersphincteric fistula tract (LIFT), and seton placement, have been reported for fistulainano [2]. Seton therapy, which gently cuts through the tract while causing fibrosis and limiting sphincter injury, has become more common among patients, especially in high fistulas. Adequate drainage, little tissue reactivity, patient comfort, and efficient healing with low recurrence rates are all characteristics of the perfect seton material [3].

A variety of materials, such as silk, rubber bands, prolene sutures, vessel loops, and latex strips, have been employed as setons (sciencedirect.com). Because of its strength, non-absorbability, and accessibility, prolene thread is frequently utilised. On the other hand, it can be linked to discomfort, more pain after surgery, and a longer recovery period. Due to its softness, flexibility, and capacity to sustain continuous draining with less tissue damage, latex glove seton has become a popular substitute. According to recent research, latex glove setons may provide more postoperative comfort and patient compliance than traditional materials. There is little research comparing prolene thread with latex glove setons in terms of healing, recurrence, postoperative pain, and complications, despite several studies assessing seton procedures [4].

When choosing the best course of treatment for individuals with perianal fistulas, it is crucial to comprehend the comparative results of these materials. In order to compare the surgical results of prolene thread and latex glove seton implantation in patients with perianal fistula and to assess their efficacy, safety, and patient satisfaction, the current observational study was carried out at Pt. JNM Medical College, Raipur, Chhattisgarh [5].

Materials and Methods

Study Design

Observational comparative study.

Study Place

Department of General Surgery, Pt. JNM Medical College, Raipur, Chhattisgarh.

Study Duration

One year.

Study Population

A total of 78 patients clinically diagnosed with perianal fistula.

Sample Size

78 patients.

- Group A: Prolene thread seton (n=39)
- Group B: Latex glove seton (n=39)

Inclusion Criteria

- Patients aged 18–65 years
- Clinically diagnosed fistula-in-ano
- Patients willing for surgery and follow-up

Exclusion Criteria

- Crohn’s disease
- Tuberculosis
- Malignancy
- Recurrent complex fistula
- Immunocompromised patients

Methodology

Investigations and a thorough clinical examination were carried out. Under spinal anaesthesia, patients had setons placed using either latex glove material or prolene thread. Weekly postoperative follow-up was conducted to evaluate patient satisfaction, discomfort, discharge, healing, recurrence, and infection.

Statistical Analysis

SPSS software was used to analyse the data. The independent t-test and chi-square test were used. A p-value of less than 0.05 was deemed statistically significant.

Results

Table 1: Postoperative Pain Score

Pain Score	Prolene Group	Latex Group	P value
Mild	10	22	
Moderate	21	14	
Severe	8	3	0.03

Table 2: Mean Healing Duration

Group	Mean Healing Time (weeks)	SD	P value
Prolene	7.1	1.5	
Latex glove	5.8	1.2	0.01

Table 3: Recurrence Rate

Recurrence	Prolene	Latex glove	P value
Present	4	2	
Absent	35	37	0.39

Table 4: Patient Satisfaction

Satisfaction Level	Prolene	Latex glove	P value
Satisfied	24	34	
Unsatisfied	15	5	0.02

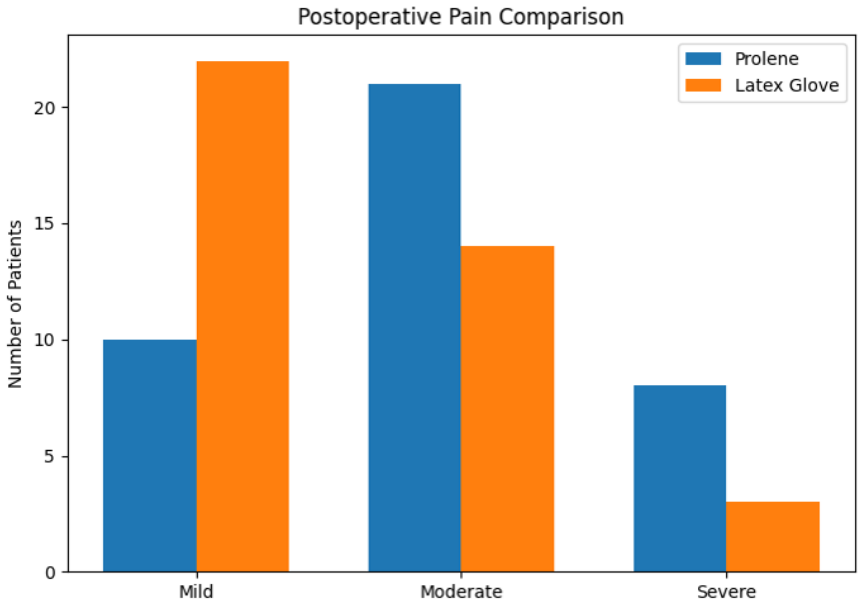

Figure 1: Post-operative pain comparison

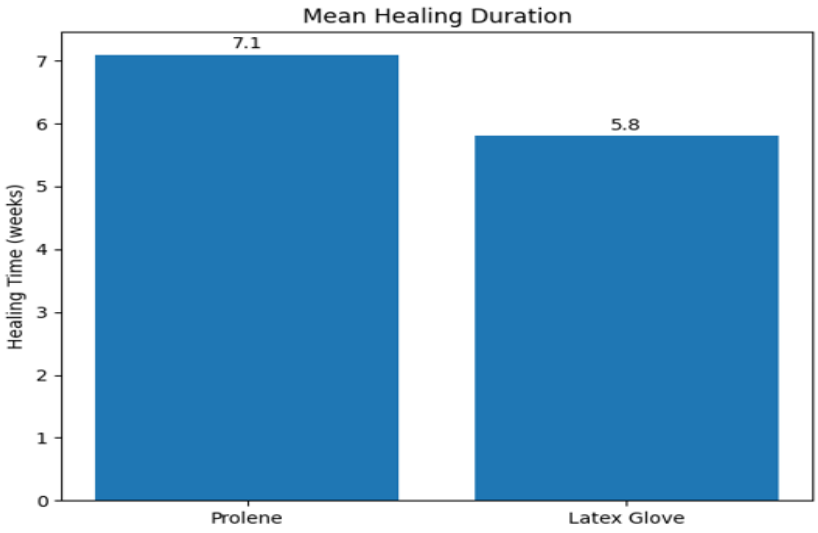

Figure 2: Mean healing duration

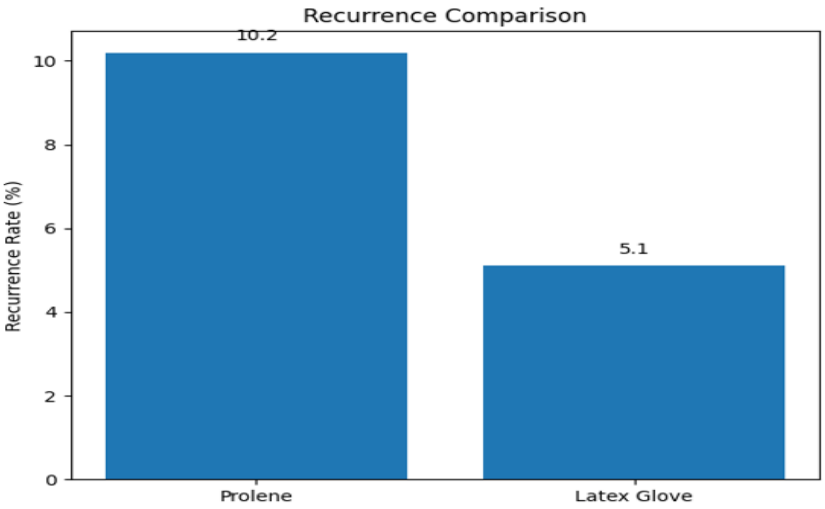

Figure 3: Recurrence comparison

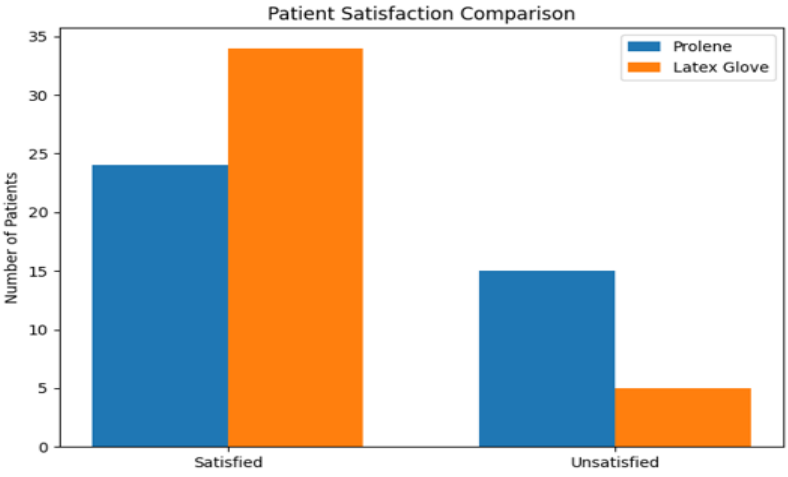

Figure 4: Patient satisfaction comparison

Discussion

A difficult anorectal disorder with high morbidity and recurrence is perianal fistula. The mainstay of treatment continues to be maintaining sphincter function while guaranteeing full fistula healing. For the treatment of fistula-in-ano, seton placement has gained acceptance, particularly for complicated and transsphincteric fistulas. Over the years, setons have been made from a variety of materials, each with unique benefits and drawbacks. In patients with perianal fistulas, the surgical results of prolene thread and latex glove setons were compared in this study [6]. In the current study, the latex glove group experienced much less postoperative pain than the prolene thread group. This could be explained by the latex material's elasticity and softness, which lessens tissue damage and pressure on the surrounding anal sphincter complex [7]. Softer seton materials were linked to better postoperative comfort and a lower need for analgesics, according to research by Malik et al. and Isbister et al. Prolene thread, on the other hand, may cause more friction and irritation due to its relative rigidity, which could exacerbate the impression of pain [8].

Additionally, the latex glove group's healing time was noticeably shorter. Patients who had latex glove seton treatment showed progressive tract closure and early fibrosis with sufficient drainage. Faster wound healing may result from the latex material's flexibility, which allows for continuous draining without significant tissue ischemia [9]. Prolene thread setons may prolong the inflammatory reaction and necessitate frequent tightening, which can postpone full recovery. Previous comparative research comparing elastic and non-elastic setons have reported similar results [10].

In fistula surgery, recurrence is still a big problem. Although the difference was not statistically significant, recurrence rates were lower in the latex glove group (5.1%) than in the prolene group (10.2%). Better drainage and less local inflammation may be the cause of the lower recurrence in latex glove setons [11]. Recurrence, however, is multifaceted and contingent upon patient compliance, drainage sufficiency, and fistula intricacy. The current study's recurrence rates are in line with known research, which shows recurrence rates ranging from 5 to 15% after seton placement [12].

Although not statistically significant, the prolene group had a slightly greater rate of postoperative infection. Prolene-related protracted healing and persistent irritation may increase the risk of local infection and discharge. Because latex glove setons are softer and have better drainage properties, they may lessen tissue damage and bacterial colonisation.

Patients who had treatment using latex glove setons reported far higher levels of satisfaction. Better overall acceptance was influenced by decreased pain, a quicker healing period, and more comfort during daily activities. In anorectal surgery, patient-centered outcomes are becoming more widely acknowledged as significant factors, especially in operations that call for extended postoperative care [13].

The results of this study indicate that latex glove setons have some comfort and healing advantages over prolene thread setons. Both materials, however, were successful in treating perianal fistula without causing serious problems with the sphincter. The study's short follow-up period and comparatively small sample size were its main limitations. To create standardised guidelines for the best seton material selection in fistula-in-ano care, long-term multicentric randomised controlled trials are advised [14].

Conclusion

The surgical results of prolene thread and latex glove seton placement in patients with perianal fistulas at Pt. JNM Medical College, Raipur, were compared in this study. The care of fistula-in-ano with

acceptable recurrence rates and sphincter function preservation was shown to be safe and successful with both approaches. Nevertheless, compared to prolene thread seton, latex glove seton showed a number of advantages. Patients who received latex glove treatment reported far less discomfort following surgery, quicker healing, and higher levels of satisfaction. The latex material's softness and elasticity probably helped to improve drainage, lessen tissue damage, and increase patient comfort after surgery. The latex glove group had decreased rates of infection and recurrence, but these changes were not statistically significant.

The results indicate that, especially in simple and moderately complex fistulas, latex glove setons may be an affordable, readily available, and patient-friendly substitute for traditional prolene thread setons. To achieve the best results, careful patient selection and appropriate surgical technique are still crucial. To validate these results and provide definitive treatment procedures for the management of perianal fistula using various seton materials, more research with bigger sample sizes, longer follow-up periods, and randomised controlled designs is advised.

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