Outcomes of Inferior Rectus Muscle Recession Surgery using Absorbable versus Non-Absorbable Sutures

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INTRODUCTION

Inferior rectus (IR) recession surgery can be associated with a significant risk of overcorrection due to

- Impact of lower lid retractors
- Rapid dissolution of absorbable sutures
- Tight muscles in thyroid eye disease (TED)
- Scar contracture around the Lockwood ligament

As a result, non-absorbable sutures have gained popularity but suffer their own disadvantages

Aims:

To evaluate the outcomes of inferior rectus recession surgery using absorbable and non-absorbable sutures.

METHODS

A retrospective study from December 2020 to January 2023 was conducted at a tertiary referral centre

All patients undergoing IR recession with absorbable (Vicryl) and non-absorbable (Ethibond, Prolene) sutures were included

Data collected included:

- Age/ Sex of the patient
- Pre and postoperative orthoptic measurements in primary position for near and distance
- Presence of TED
- Surgeon level (fellow/consultant)
- Number of muscles operated on.

Success was defined **as ≤5 prism diopters deviation** in primary position.

RESULTS

Total 32 IR recession procedures: 26 with absorbable sutures, 6 with non-absorbable
Mean follow-up: 3.6 months (1 month – 25 months)

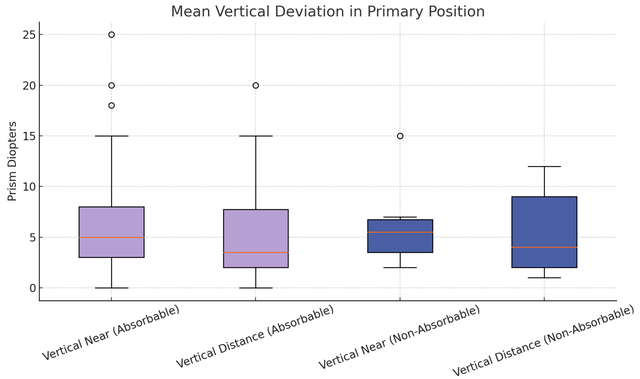


Figure 1: Box plots showing the distribution of vertical deviation (in Prism Diopters) at final follow-up for patients treated with absorbable and non-absorbable sutures.

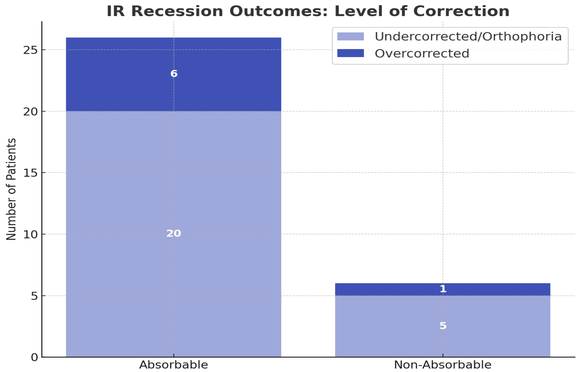


Figure 2: Stacked bar chart illustrating postoperative outcomes following inferior rectus (IR) recession, comparing absorbable and non-absorbable suture groups.

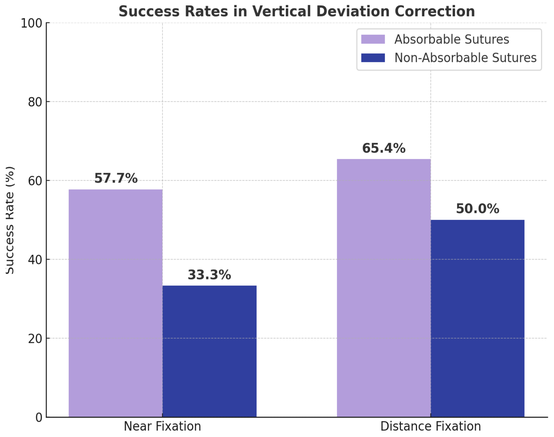


Figure 3: Bar chart comparing the success rates of vertical deviation correction at final follow-up for patients treated with absorbable versus non-absorbable sutures.

Variable	Coefficient	p-value
Adjustable Suture Use	-1.51	0.214
Number of Muscles Involved	-1.81	0.12
Presence of TED	2.0731	0.09
Consultant Involvement	-0.3	0.762

Table 1: Table depicting logistic regression analysis, accounting for absorbability of suture as a covariate, assessed impact on success in at least one of near or distance fixation.

CONCLUSION

This study demonstrates that IR recession surgeries using absorbable sutures yield outcomes comparable to those using non-absorbable sutures, with **no significant difference in success rates** and overcorrection rates consistent with existing literature.

These findings suggest that absorbable sutures are equally viable in use for IR recession surgeries.

FUTURE WORK

1. Larger data set – particularly increasing non-absorbable suture data set
2. Longer follow-up
3. Multicentre recruitment