SUTURELESS CLOSURE IN GASTROSCHISIS: AESTHETIC OUTCOME ASSESSMENT

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INTRODUCTION

Gastroschisis is the most common congenital defect of the abdominal wall. Sutureless-closure (SC) is increasingly used due to its benefits: it avoids general anesthesia, reduces mechanical ventilation, and lowers the risk of surgical site infections (1). However, published literature on aesthetic outcomes is limited.

OBJECTIVE

Evaluate the umbilical aesthetic result in gastroschisis patients treated with SC and compare it with no surgery and laparoscopic surgery patients.

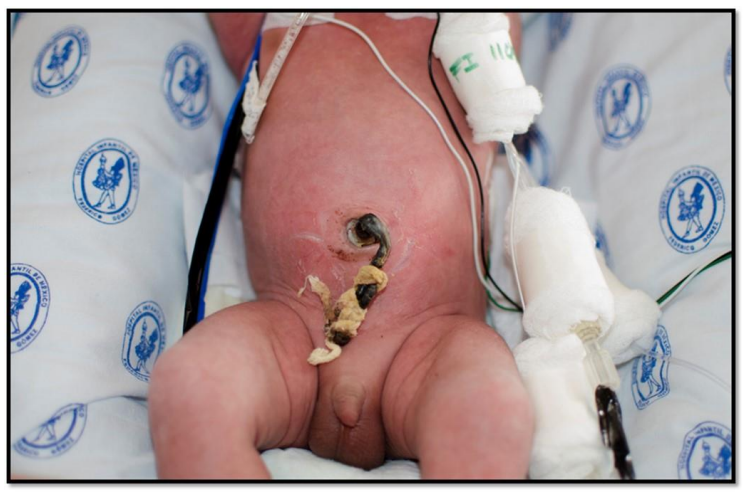


Figure 1. Patient with sutureless closure at 3-week follow-up

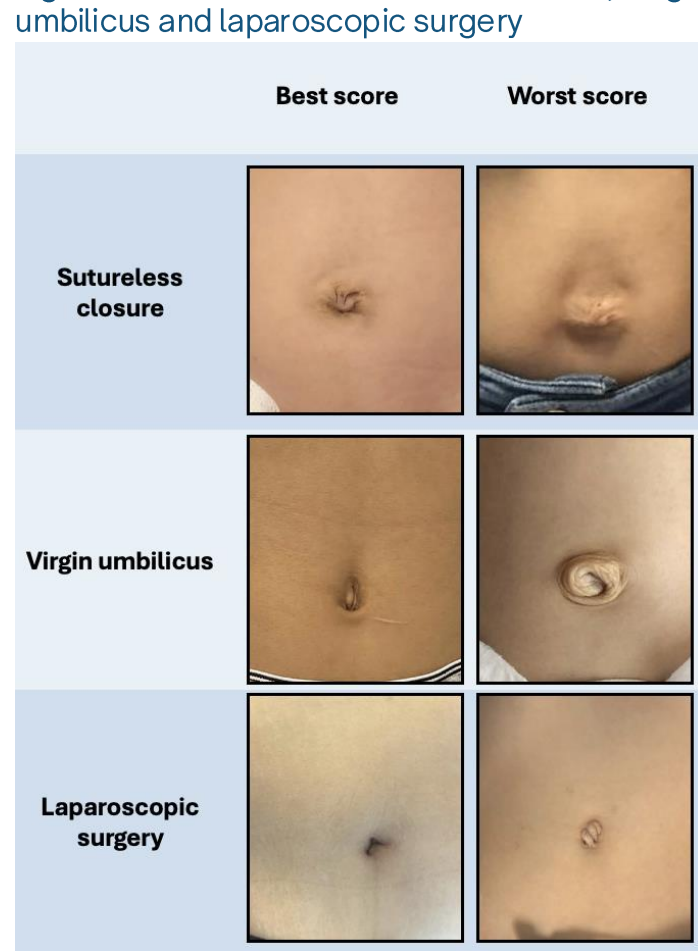
METHODS

Ambispective study. Three groups were analyzed.

- Sutureless closure (SC)
- Virgin umbilicus
- Laparoscopic

We used standardized photographs (taken from 30cm) and two surgeons blindly evaluated aesthetics using a 5-item Likert scale (2) (depth, width, length, shape, and natural appearance; score 5–25). Parents of SC patients were also surveyed.

Figure 1. Best and worst score of SC, virgin umbilicus and laparoscopic surgery



RESULTS

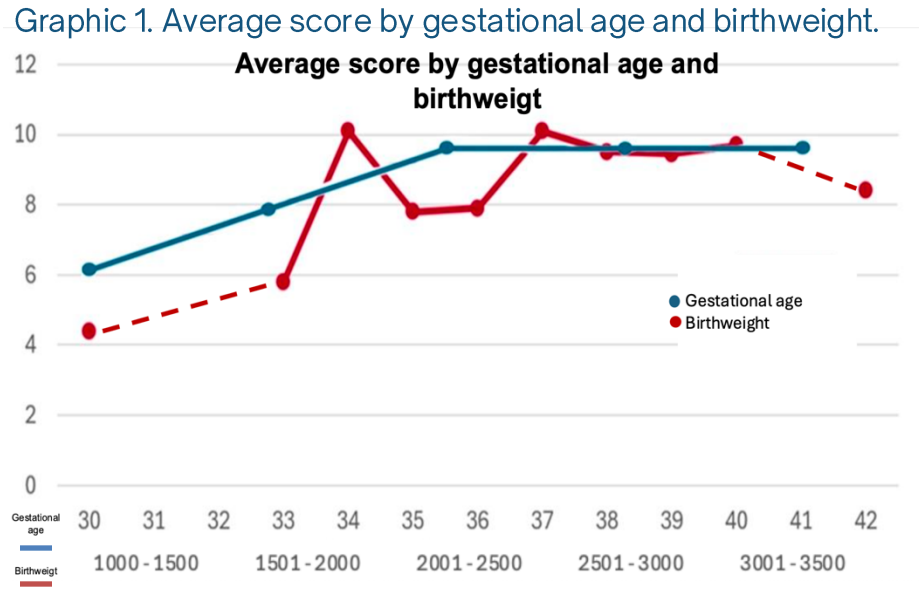
86 SC, 78 virgin umbilicus, and 45 laparoscopic scars were evaluated (Table 1). We found that patients ≤1500g and <34 weeks had lower scores, while those >2000g and >37 weeks had higher scores (Graphic 1).

Table 1. Comparison of median score, range and parental evaluation.

	Surgeon evaluations		Parents evaluations
Group	Median score	Range	Parental average score
Sutureless	8 (12 - 5)*	5 - 20	22 (11 – 25)
Laparoscopic	12	5 - 24	-
Virgin umbilicus	18	5 - 25	-

*The median in the sutureless group corresponds to the evaluation of two surgeons (12 and 5 points), with an average of 8.

Graphic 1. Average score by gestational age and birthweight.



DISCUSSION

The literature of aesthetic result in SC is limited, Witt et al compared SC with sutured closure, been the first one superior (2). SC results were acceptable to parents. We found an important interobserver discordance. Some sutureless cases had similar scores to unoperated umbilici.

Low birth weight and prematurity were associated with lower aesthetic scores.

CONCLUSION

Aesthetic evaluation remains subjective, even with validated scales. Some sutureless closures showed outcomes comparable to unoperated umbilicus. This study shows that patients over 1500g and 34 weeks gestation achieve better aesthetic results.

REFERENCES

1. Diyaolu M, Wood LS, Bruzoni M. Sutureless closure for the management of gastroschisis. Transl Gastroenterol Hepatol [Internet]. 2021;6:31–31.
2. Zenitani M, Sasaki T, Tanaka N, Oue T. Umbilical appearance and patient/parent satisfaction over 5 years of follow-up after umbilical hernia repair in children. J Pediatr Surg. 2018;53(7):1288–1294
3. Witt RG, Zobel M, Padilla B, Lee H, MacKenzie TC, Vu L. Evaluation of clinical outcomes of sutureless vs sutured closure techniques in gastroschisis repair. JAMA Surg [Internet]. 2019;154(1):33–9.