Evaluating Surgical Outcomes of Hiatal Hernia Repair Techniques with and without Fundoplication: A Network Meta-Analysis

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Introduction

- Laparoscopic surgery has become the gold standard for hiatal hernia repair, however, some patients have the propensity for recurrence, dysphagia, need for reoperation, and post-operative complications.
- We evaluated the efficacy of various hiatal hernia repair techniques, comparing primary repair with and without mesh reinforcement (absorbable or non-absorbable), with all but 20 cases including a concomitant fundoplication wrap.

Methods

- A network meta-analysis of nine randomized controlled trials was conducted to determine which surgical technique offers the lowest risk of recurrence, dysphagia, need for reoperation, and complications.
- Results were reporting using:
  - Network Maps
  - Rankograms with p-scores
  - League tables
  - Forest plots
  - Transitivity analysis
- Risk of Bias (Risk of Bias 2 tool) and Confidence in Evidence (CINeMA) were also assessed
- Primary Outcome Measures: Recurrence
- Secondary Outcome Measures: Dysphagia, Complications, and Reoperation

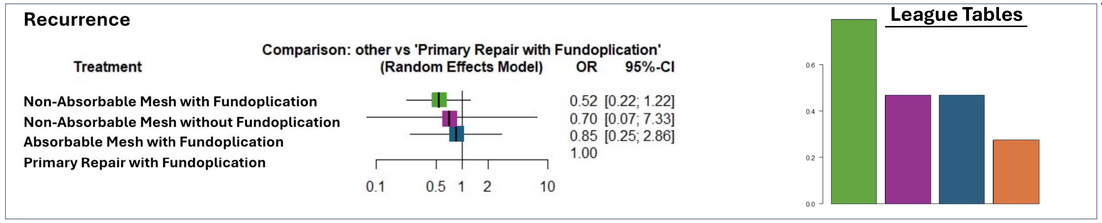
9 Randomized Controlled Trials (2002 – 2020)

	Total N = 815	Primary Repair with Fundoplication n = 361	Mesh Repair with Fundoplication n = 454	
			Absorbable Mesh n = 98	Non-Absorbable Mesh n = 356*
Recurrence	157 19.3%		34 (34.7%)	46 (12.9%)
Dysphagia	41 (11.4%)		13 (13.3%)	30 (8.4%)
Reoperations	15 (4.2%)		4 (3.9%)	14 3.9%)
Complications	38 (10.5%)		1 (1.0%)	34 (9.6%)

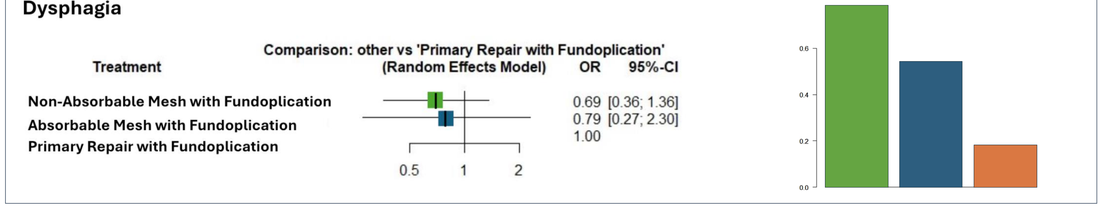
*20 patients in non-absorbable mesh group did not have concomitant fundoplication

Results

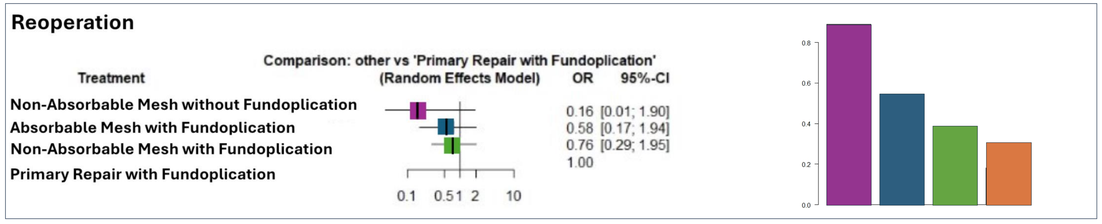
Recurrence



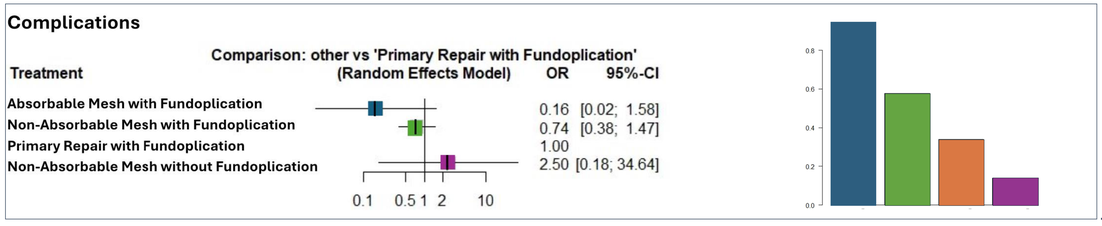
Dysphagia

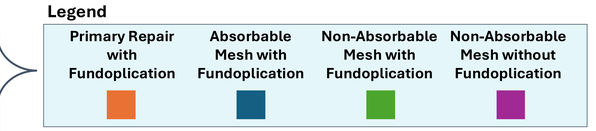


Reoperation



Complications





Primary Repair with Fundoplication
Recurrence, Dysphagia, Reoperation

Absorbable Mesh with Fundoplication
Complications

Non-Absorbable Mesh with Fundoplication
Recurrence, Dysphagia

Non-Absorbable Mesh without Fundoplication
Complications
Reoperation

Conclusion

- Non-absorbable mesh in fundoplication may reduce recurrence and dysphagia, while absorbable mesh is associated with fewer complications.
- No significant differences were observed between primary repair and mesh reinforcement in terms of key clinical outcomes.
- Low confidence and certainty of evidence (per CINeMA assessment) highlight the need for cautious interpretation of findings.
- Future RCTs with long-term follow-up are necessary to establish clearer guidelines for hiatal hernia repair and improve patient outcomes.