Endoscopic Closure Techniques of Bariatric Surgery Complications: A Meta-Analysis

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INTRODUCTION

- Leaks and fistulae are rare but dangerous complications of bariatric surgery
- Historically have been treated multimodally with surgical drainage and aggressive antibiotic therapy
- Endoscopic interventions have become a valuable treatment option
  - Over-the-scope clipping and endoscopic suturing are commonly used

OBJECTIVES

- Perform a systematic literature review and meta-analysis comparing the effectiveness of OTSC versus endoscopic suturing to treat complications following bariatric surgery

METHODS

- Systematic literature search performed in PubMed
- Studies focusing on stents or those that incorporated multiple closure techniques simultaneously were excluded
- MedCalc software used for meta-analysis

RESULTS

Figure 1: PRISMA Diagram

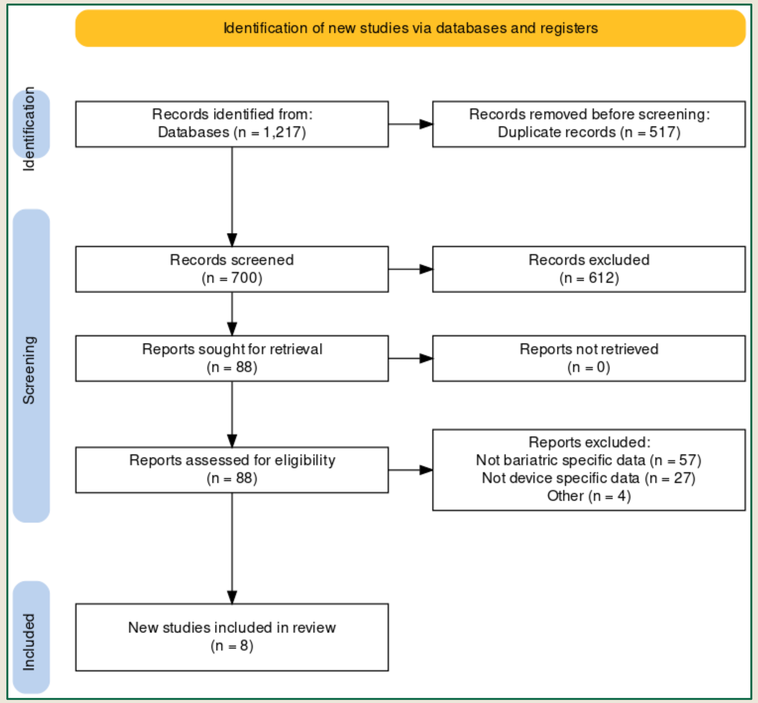


Table 1: OTSC Included Articles

Study	Year	n	Successful closure (n)	Repeat Intervention (n)
Benosman et al.	2018	7	7	not reported
Keren et al.	2015	20	17	not reported
Law et al.	2015	8	4	5
Mercky et al.	2014	15	13	6
Baron et al.	2012	11	9	1

Table 2: Endoscopic Suturing Included Articles

Study	Year	n	Successful closure (n)	Repeat Intervention (n)
Sharaiha et al.	2016	20	5	not reported
Fernandez-Esparrach et al.	2010	52	9	not reported
Mukewar et al.	2016	20	6	12

Figure 2: OTSC Success Rate Forest Plot

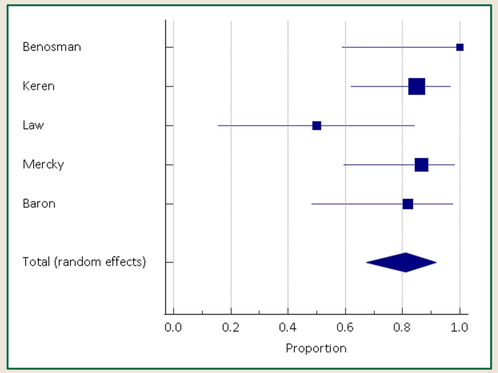


Figure 3: Endoscopic Suturing Success Rate Forest Plot

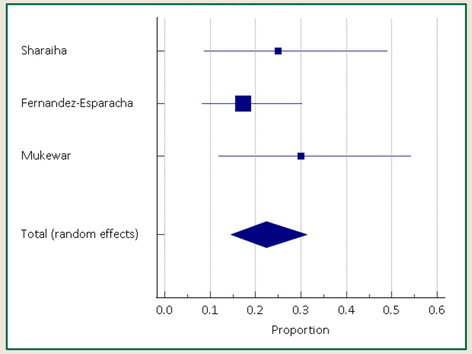
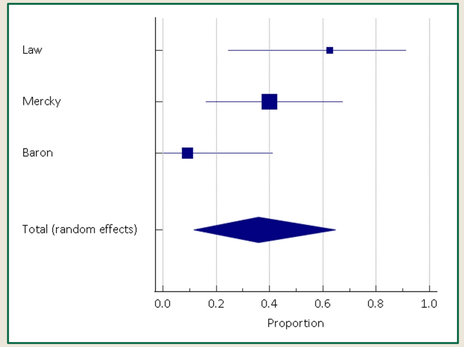


Figure 4: OTSC Reintervention Rate Forest Plot



DISCUSSION

- Pooled proportions of successful closure for OTSC and endoscopic suturing are 81.1% and 22.4% respectively
  - OTSC: I^2 = 39% (p=0.15)
  - Endoscopic Suturing: I^2 = 0% (p=0.44)
- Previous meta-analyses have found OTSC success rate to be between 67%-85% for closure of bariatric surgery complications
- Weighted pooled proportion of reintervention across OTSC studies is 35%
  - I^2 = 68% (p=0.04)
- Reintervention reported in 1 endoscopic suturing study (60%)
- Both techniques have been shown to be effective in previous literature for different indications

Observational reports show that patients managed with OTSC were more likely to experience healing of their defect than those managed with endoscopic suturing.