

Does Weight Loss Following Bariatric Surgery Improve Perioperative Outcomes for Knee Replacement?

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Background

There is limited prospective data, and conflicting retrospective data, providing guidance on how to optimally manage patients with morbid obesity and severe knee osteoarthritis. This study sought to review the effect of bariatric surgery on knee pain and knee surgery 30-day outcomes, as well as assess whether the sequence of bariatric and knee surgery has any effect on 30-day bariatric and knee surgery outcomes.

Methods

- Retrospective review of all patients undergoing sleeve gastrectomy (SG) from July 2007 – July 2016 with knee pain or knee surgery (pre or post SG) at a university hospital
- Identified patients who had improvement in knee pain following SG. This was determined by self-reporting by patients at clinic visits and no longer needing orthopedic interventions
- Assessed surgical outcomes in patients undergoing knee arthroscopy followed by SG compared to patients undergoing SG followed by knee arthroscopy
- Assessed surgical outcomes in patients undergoing total knee replacement (TKR) followed by SG compared to patients undergoing SG followed by TKR

Results

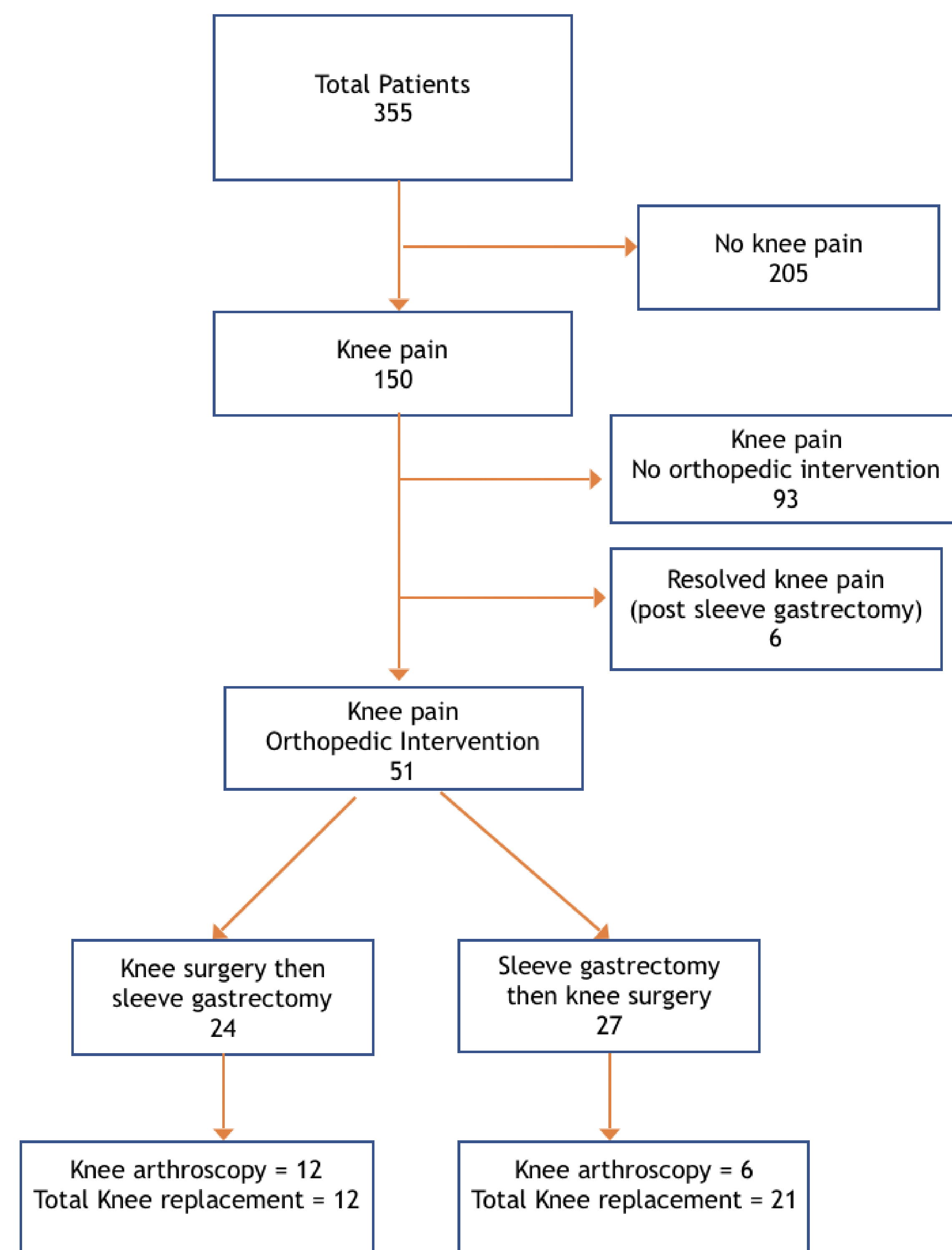


Table 1. Proportion of arthroscopy/SG patients who experienced post-operative complication

	Total (N=18)	Arthroscopy First (N=12)	SG First (N=6)	P-value
Post SG complication (N %)	2 (11.1)	2 (16.7)	0 (0)	0.431
Post Arthroscopy complication (N %)	0 (0)	0 (0)	0 (0)	-

SG = sleeve gastrectomy

Table 2. Proportion of TKR/SG patients who experienced post-operative complication

	Total (N=33)	TKR First (N=12)	SG First (N=21)	P-value
Post SG complication (N %)	3 (9.09)	3 (25.0)	0 (0)	0.040
Post TKR complication (N %)	2 (6.06)	1 (8.33)	1 (4.76)	1.00

SG = sleeve gastrectomy, TKR = total knee replacement

Table 3. Association between post-bariatric surgery complications and demographic factors

Demographic factors	Odds ratio [95% CI]	p-value
Age at the time of bariatric surgery	1.03 [0.92 – 1.14]	p=0.64
Pre-op BMI	0.86 [0.72 – 1.02]	p=0.09
Post-op BMI	0.84 [0.69 – 1.03]	p=0.10
Change in BMI	0.95 [0.77 – 1.17]	p=0.61
Total weight loss (lbs)	0.98 [0.95 – 1.02]	p=0.98

Results Continued

- Among the cohort of 355 patients who underwent SG, 150 (42.4%) had knee pain
- 51 (14.3%) had knee surgery
 - 18 arthroscopies
 - 33 knee replacements
- Of all patients with knee pain, 18% (6/33) had marked improvement in their knee pain following SG
- No statistical difference in 30-day bariatric outcomes were noted in the sequencing of surgery for SG and arthroscopy (16% arthroscopy first, 0% SG first, p=0.43)
- A higher rate of SG complications was seen in the patients undergoing TKR first (25% vs 0%, p=0.04)
- There were no difference in TKR complications (8.3% TKR first, 4.8% SG first, p=1.00)

Conclusion

Approximately 1 in 5 patients with morbid obesity and severe knee osteoarthritis see marked improvement in knee pain following SG. Based on findings from this study, the sequencing of SG and knee arthroscopy or replacement may also impact patient outcomes and forms the basis of a new prospective randomized trial opening at the QEII Health Sciences Centre