

Laparoscopic Sleeve Gastrectomy

Surgical Case Series Report

Retrospective Analysis • January 2023 – December 2024 • $n = 18$ Patients

PRINCIPAL SURGEON

Dr. Amelia Voss, FRCS

Consultant Bariatric Surgeon

CO-INVESTIGATOR

Dr. Carlos Mendez, MD

Surgical Registrar

INSTITUTION

Meridian Academic Medical Centre

14 Harrow Lane, Westfield, WF2
9KT

ETHICS REFERENCE

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REPORT VERSION

v2.1 – Final

FUNDING

No external funding received

Abstract. This retrospective case series evaluates the surgical outcomes and short-term complications of laparoscopic sleeve gastrectomy (LSG) performed at Meridian Academic Medical Centre between January 2023 and December 2024. Eighteen consecutive patients (mean age 41.6 ± 9.2 years; mean preoperative BMI 46.3 ± 7.1 kg/m²) underwent standard five-port LSG under general anaesthesia. The primary endpoint was percentage excess weight loss (%EWL) at 12 months. Secondary endpoints included 30-day morbidity, operative time, length of hospital stay, and resolution of obesity-related comorbidities. Mean %EWL at 12 months was $68.4 \pm 12.7\%$. No intraoperative deaths occurred. Major complications (Clavien–Dindo grade $\geq$ III) were observed in 2/18 patients (11.1%). These findings support LSG as a safe and effective bariatric procedure in a high-volume academic centre.

Keywords: *sleeve gastrectomy; bariatric surgery; obesity; weight loss; morbidity; case series*

INTRODUCTION

Obesity remains a global health challenge, affecting approximately 650 million adults worldwide and increasing the risk of type 2 diabetes, hypertension, obstructive sleep apnoea, and cardiovascular disease. Metabolic and bariatric surgery is the most effective long-term treatment for severe obesity, achieving sustained weight loss and significant comorbidity resolution.

Laparoscopic sleeve gastrectomy has emerged as the most commonly performed bariatric procedure globally, accounting for roughly 60% of all primary bariatric operations. Its relative technical simplicity, favourable risk profile, and consistent efficacy make it particularly suitable for high-volume centres seeking standardised patient outcomes. This report presents a retrospective case series of 18 consecutive LSG procedures conducted at Meridian Academic Medical Centre, with the aim of documenting operative parameters, perioperative outcomes, and 12-month weight-loss data.

to contribute to the growing evidence base.

PATIENTS & METHODS

Patient Selection

Patients were eligible if they met NICE bariatric guidelines (BMI ≥ 40 kg/m², or ≥ 35 with a significant comorbidity), had completed a 12-week supervised weight management programme, and were deemed fit for general anaesthesia by a multidisciplinary team including a bariatric surgeon, dietitian, clinical psychologist, and specialist nurse. Exclusion criteria included prior bariatric surgery, active malignancy, untreated psychiatric illness, or non-compliance with preoperative dietary instructions.

Surgical Technique

All procedures were performed by a single consultant surgeon (A.V.) using a standardised five-trocar laparoscopic technique. The greater curvature was mobilised from the pylorus (3 cm proximal) to the angle of His. Gastric transection was performed over a 36 Fr bougie using a linear endoscopic stapler (Synapse MedTech SureCut Pro, 60 mm green cartridges), reinforced with absorbable suture. A leak test was conducted intraoperatively via methylene blue dye. Nasogastric tube and urinary catheter were removed before recovery-room discharge.

Outcome Measures

- **Primary:** %EWL at 12 months post-operatively
- **Secondary:** Operative time (skin-to-skin), length of hospital stay (LOS), 30-day readmission rate, complications graded by Clavien–Dindo classification, and resolution of comorbidities (T2DM, hypertension, OSA) at 12 months

Statistical Analysis

Continuous variables are expressed as mean $\pm$ SD or median [IQR] as appropriate. Categorical variables are presented as counts and percentages. All analyses were performed using standard statistical methods. A p -value of < 0.05 was considered statistically significant.

PATIENT DEMOGRAPHICS & BASELINE CHARACTERISTICS

Characteristic	All Patients (n=18)	Female (n=13)	Male (n=5)
Age, years (mean ± SD)	41.6 ± 9.2	40.1 ± 8.7	45.8 ± 10.3
BMI, kg/m ² (mean ± SD)	46.3 ± 7.1	45.7 ± 6.8	48.2 ± 8.0
Excess weight, kg (mean ± SD)	54.8 ± 16.3	51.2 ± 14.9	64.4 ± 18.7
Ideal body weight, kg (mean)	68.0	63.0	83.0
ASA grade I / II / III, %	0 / 56 / 44	0 / 62 / 38	0 / 40 / 60
Comorbidities at baseline			
Type 2 diabetes mellitus	9 (50.0%)	6 (46.2%)	3 (60.0%)
Hypertension	11 (61.1%)	8 (61.5%)	3 (60.0%)
Obstructive sleep apnoea	7 (38.9%)	4 (30.8%)	3 (60.0%)
GORD / reflux	5 (27.8%)	4 (30.8%)	1 (20.0%)
Dyslipidaemia	8 (44.4%)	6 (46.2%)	2 (40.0%)
Preoperative preparation			
12-wk diet programme completed	18 (100%)	13 (100%)	5 (100%)
Liver shrinkage diet (2 wk)	18 (100%)	13 (100%)	5 (100%)
Preop weight loss, kg (mean)	7.4	6.9	8.8

OPERATIVE & PERIOPERATIVE OUTCOMES

Key Metrics Summary

72.4 min Mean Operative Time	2.1 days Mean Hospital Stay	11.1% Major Complication Rate	68.4% Mean %EWL at 12 mo
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Parameter	Value	Range / IQR
Operative time, min (mean ± SD)	72.4 ± 18.6	44 – 118
Conversion to open, n (%)	0 (0%)	–
Intraoperative blood loss, mL	48.3 ± 22.1	20 – 110
Bougie size, Fr	36	–
Staple-line reinforcement used	18 (100%)	–
Intraoperative leak test positive	0 (0%)	–
Hospital LOS, days (median [IQR])	2.0 [2.0–3.0]	1 – 5
30-day readmission	2 (11.1%)	–
30-day mortality	0 (0%)	–

COMPLICATIONS

⚠ Complications Graded by Clavien–Dindo Classification

Grade	Description	Management	<i>n</i>	%
I	Nausea / vomiting >48 h	IV antiemetics, oral step-down	3	16.7
I	Wound seroma (port site)	Conservative, compression	1	5.6
II	Urinary tract infection	Oral antibiotics	1	5.6
IIIa	Staple-line haemorrhage	Endoscopic haemostasis	1	5.6
IIIb	Gastric leak (distal)	Re-laparoscopy, drainage	1	5.6
IV	–	–	0	0
V (mor- tality)	–	–	0	0
Total any-grade complication			7	38.9
Major complication (grade ≥ III)			2	11.1

SELECTED INDIVIDUAL CASE SUMMARIES

👤 Case 1 – Grade IIIb Complication: Staple-Line Leak

Patient: Female, 38 years
BMI (preop): 51.2 kg/m²
Comorbidities: T2DM, hypertension, OSA
Operative time: 94 min
Estimated blood loss: 60 mL
Postop day of event: Day 3
Finding: CT-confirmed distal sleeve leak
Intervention: Re-laparoscopy, drain insertion, nil-by-mouth, IV antibiotics × 12 days
LOS: 17 days total; full recovery
12-month outcome: BMI 36.1 kg/m²; %EWL = 56.4%; T2DM in remission; hypertension medications reduced.

👤 Case 2 – Grade IIIa Complication: Staple-Line Haemorrhage

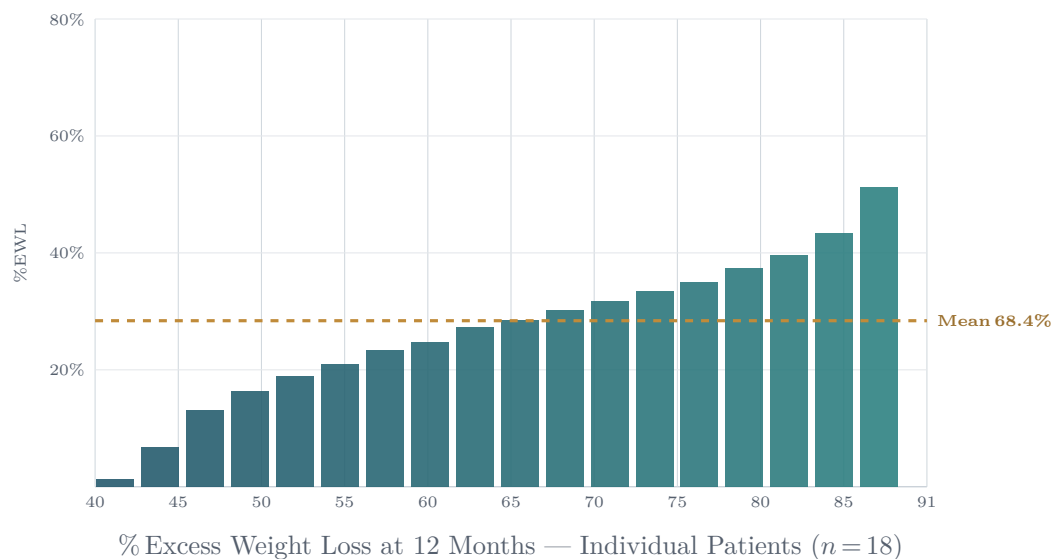
Patient: Male, 52 years
BMI (preop): 43.8 kg/m²
Comorbidities: Hypertension, dyslipidaemia
Operative time: 81 min
Estimated blood loss: 110 mL (highest in series)
Postop day of event: Day 1
Finding: Haematemesis; endoscopy confirmed intraluminal haemorrhage at proximal staple line
Intervention: Endoscopic adrenaline injection, hemoclip placement
LOS: 5 days; no further bleeding
12-month outcome: BMI 35.4 kg/m²; %EWL = 61.0%; hypertension resolved; on statin therapy only.

👤 Case 3 – Excellent Outcome: Highest %EWL in Series

Patient: Female, 29 years
BMI (preop): 42.1 kg/m²
Comorbidities: OSA (mild), GORD
Operative time: 55 min
Estimated blood loss: 25 mL
Hospital stay: 2 days
Postop course: Uneventful; tolerating fluids at 8 h; mobilised same day
12-month BMI: 27.3 kg/m²
%EWL at 12 months: 91.3%
12-month outcome: OSA fully resolved (confirmed PSG); GORD resolved; no medications required. Patient enrolled in long-term bariatric follow-up programme.

WEIGHT-LOSS OUTCOMES AT 12 MONTHS

Outcome Measure	Value (mean $\pm$ SD)	Range
BMI at 12 months, kg/m ²	31.4 $\pm$ 5.2	24.8 – 41.6
BMI reduction, kg/m ²	14.9 $\pm$ 4.3	7.1 – 24.0
Total weight loss, kg	41.3 $\pm$ 12.8	19.4 – 68.7
Excess weight loss (%EWL)	68.4 $\pm$ 12.7	41.2 – 91.3
Total body weight loss (%TBWL)	28.6 $\pm$ 7.1	14.3 – 43.5
Comorbidity resolution at 12 months (n, %)		
T2DM remission (HbA1c <48 mmol/mol off medications)	6/9 (66.7%)	–
Hypertension resolved / medications halved	8/11 (72.7%)	–
OSA resolved (PSG confirmed)	5/7 (71.4%)	–
Dyslipidaemia improved (LDL reduction >20%)	7/8 (87.5%)	–



DISCUSSION

This single-centre retrospective case series demonstrates that laparoscopic sleeve gastrectomy can be performed with low morbidity and excellent 12-month weight-loss outcomes within a high-volume academic bariatric programme. Our mean %EWL of $68.4 \pm 12.7\%$ compares favourably with published meta-analytic estimates of 60–70% at one year.

The two major complications (11.1%) are consistent with published series from comparable centres, which report major complication rates of 5–15% for LSG. The single gastric leak was identified on day 3 and managed successfully by re-laparoscopy, reflecting the importance of early recognition and a low threshold for surgical re-exploration.

Comorbidity resolution rates were high: 66.7% of patients with T2DM achieved full remission, and 72.7% of hypertensive patients either resolved or achieved significant medication reduction at 12 months. These results align with the metabolic benefits widely reported in the bariatric literature.

Limitations of this series include its retrospective design, single-surgeon experience, small sample size, and 12-month maximum follow-up. A prospective randomised study comparing LSG with

Roux-en-Y gastric bypass within this institution is planned (MAMC-SURG-2025-0012, pending ethics approval).

CONCLUSIONS

- ✓ LSG was performed safely in all 18 patients with zero intraoperative mortality and zero conversions to open surgery.
- ✓ Mean %EWL of 68.4% at 12 months confirms the procedure's efficacy in a real-world academic setting.
- ✓ Comorbidity resolution was substantial: T2DM remission 66.7%, hypertension resolution 72.7%, OSA resolution 71.4%.
- ! Major complication rate of 11.1% highlights the need for continued staple-line technique refinement and vigilant postoperative monitoring.
- ➔ Prospective controlled study is warranted to compare LSG and RYGB in this patient population.

AUTHOR CONTRIBUTIONS & DISCLOSURES

Author Contributions

A. Voss: Concept, surgical procedures, data analysis, manuscript preparation.

C. Mendez: Data collection, literature review, manuscript revision.

P. Okafor: Statistical analysis, figure preparation.

S. Chen: Dietetic assessment, postoperative follow-up, comorbidity data.

R. Hargreaves: Critical review, supervision.

Declarations

Conflict of interest: All authors declare no financial or personal conflict of interest related to the devices or techniques described.

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Ethics approval: Granted by the Meridian AMC Institutional Review Board (Ref: MAMC-SURG-2023-0041). All patients provided written informed consent.

Data availability: Anonymised case data available on reasonable request to the corresponding author.

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