Pre-operative endoscopic screening and Barrett oesophagus for sleeve gastrectomy

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CONFLICT OF INTEREST DISCLOSURE

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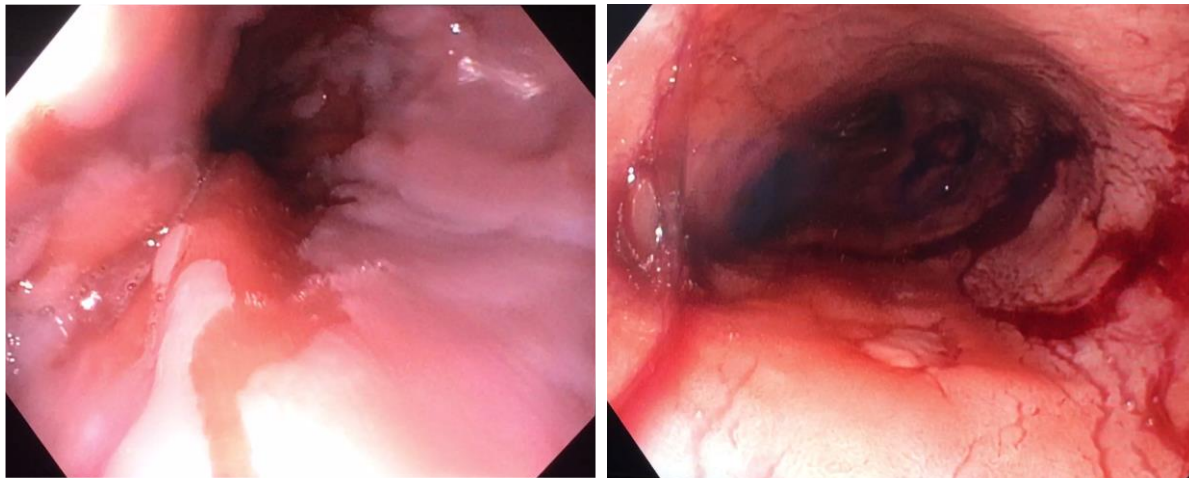
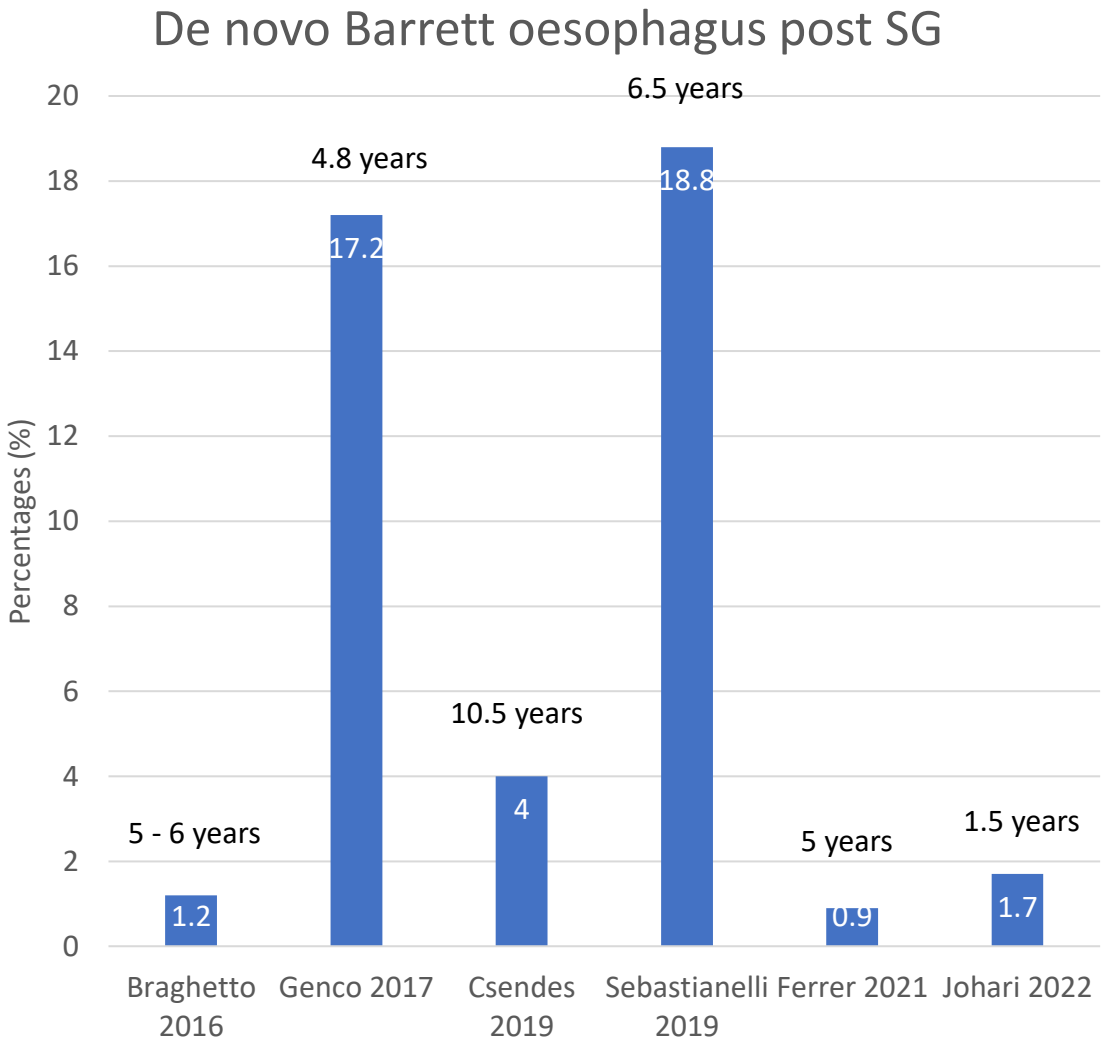
[X] I have no potential conflict of interest to report

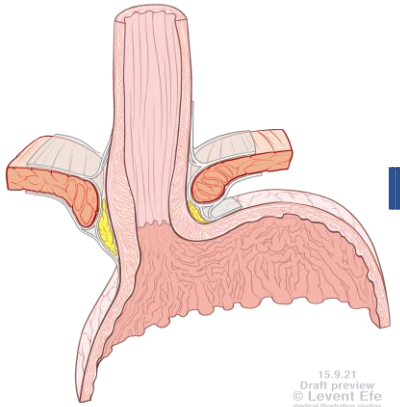


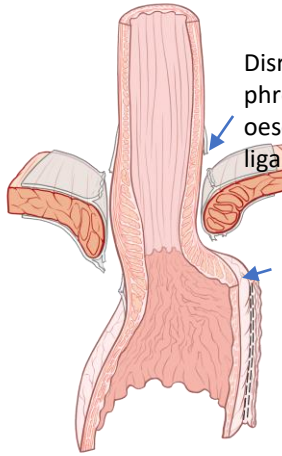
Around 3200 patients out of 6.4 million bariatric surgery patients (0.05%) are estimated to develop oesophageal cancer in 20 years (Plat et al, Obes Surg 2021).



The proposed mechanism of pseudo-columnarisation of the lower oesophagus following sleeve gastrectomy

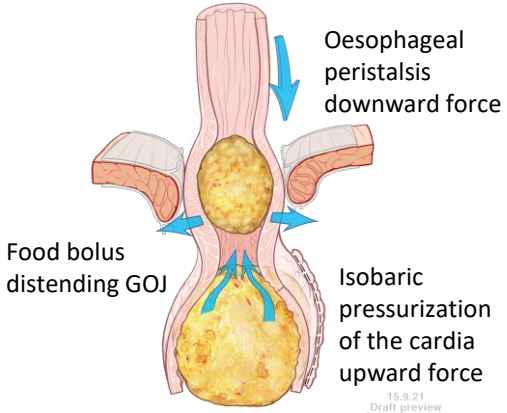
Normal GOJ

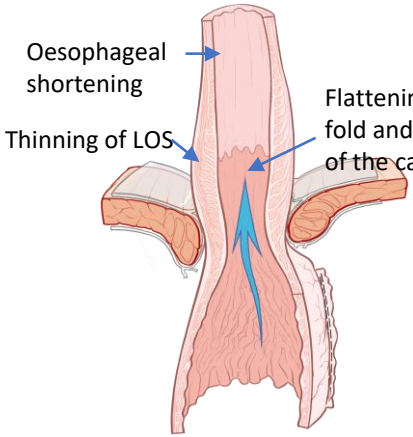




Uncoupling of the angle of His permitting increase mobility

Isobaric pressurization during swallowing creating distension forces between LOS and diaphragm



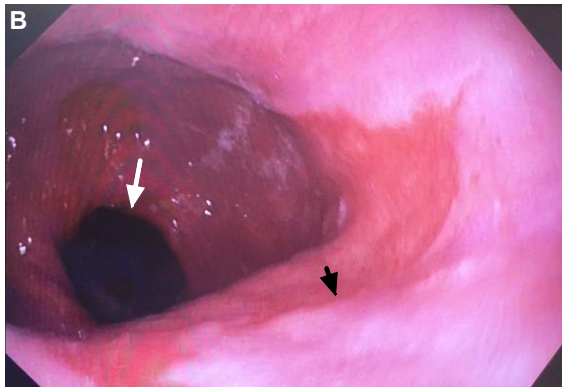


Proximal migration of Z-line and axial separation of LOS and diaphragm

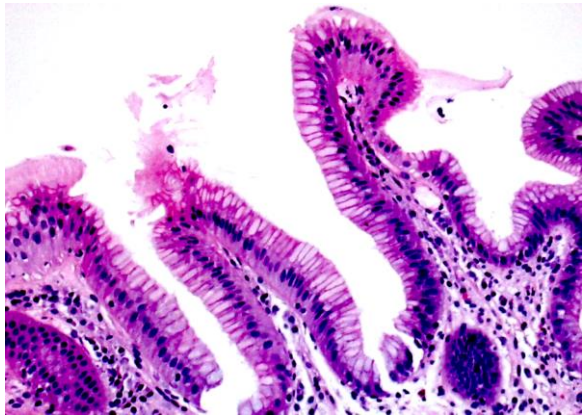
Tubularized and Effaced Gastric Cardia Mimicking Barrett Esophagus Following Sleeve Gastrectomy

Protocolized Endoscopic and Histological Assessment With High-resolution Manometry Analysis

Yazmin Johari, MBBS,†✉ Kenny Budiman,*‡ William Catchlove, MBBS,*† Cheryl Laurie, BHSc,* Geoffrey Hebbard, BMedSci, MBBS, PhD, FRACP,§ Sam Norden, MBBS, FRCPA,|| Wendy A. Brown, MBBS, PhD, FRACS, FACS,*† and Paul Burton, MBBS, PhD, FRACS*†*



Tubularised cardia



Glandular-type gastric mucosa epithelium and no goblet cells.

Population screening program

- Cancer Council of Australia
  - *The potential benefits of an organised population screening program for cancer must **outweigh any potential harms** that may result in the use of a screening test in people who are otherwise well.*
- Whiteman & Kendall (MJA 2015)
  - *For widespread Barrett's oesophagus screening to be considered, the **costs of detection need to be reduced substantially** with no compromise in accuracy.*

Obesity Surgery (2020) 30:3135–3153
https://doi.org/10.1007/s11695-020-04720-z

REVIEW

IFSO Position Statement on the Role of Esophago-Gastro-Duodenal Endoscopy Prior to and after Bariatric and Metabolic Surgery Procedures

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Endoscopy should be considered for patients without upper GI symptoms who are planning to undergo a bariatric procedure due to the 25.3% chance of an unexpected finding that may alter management.

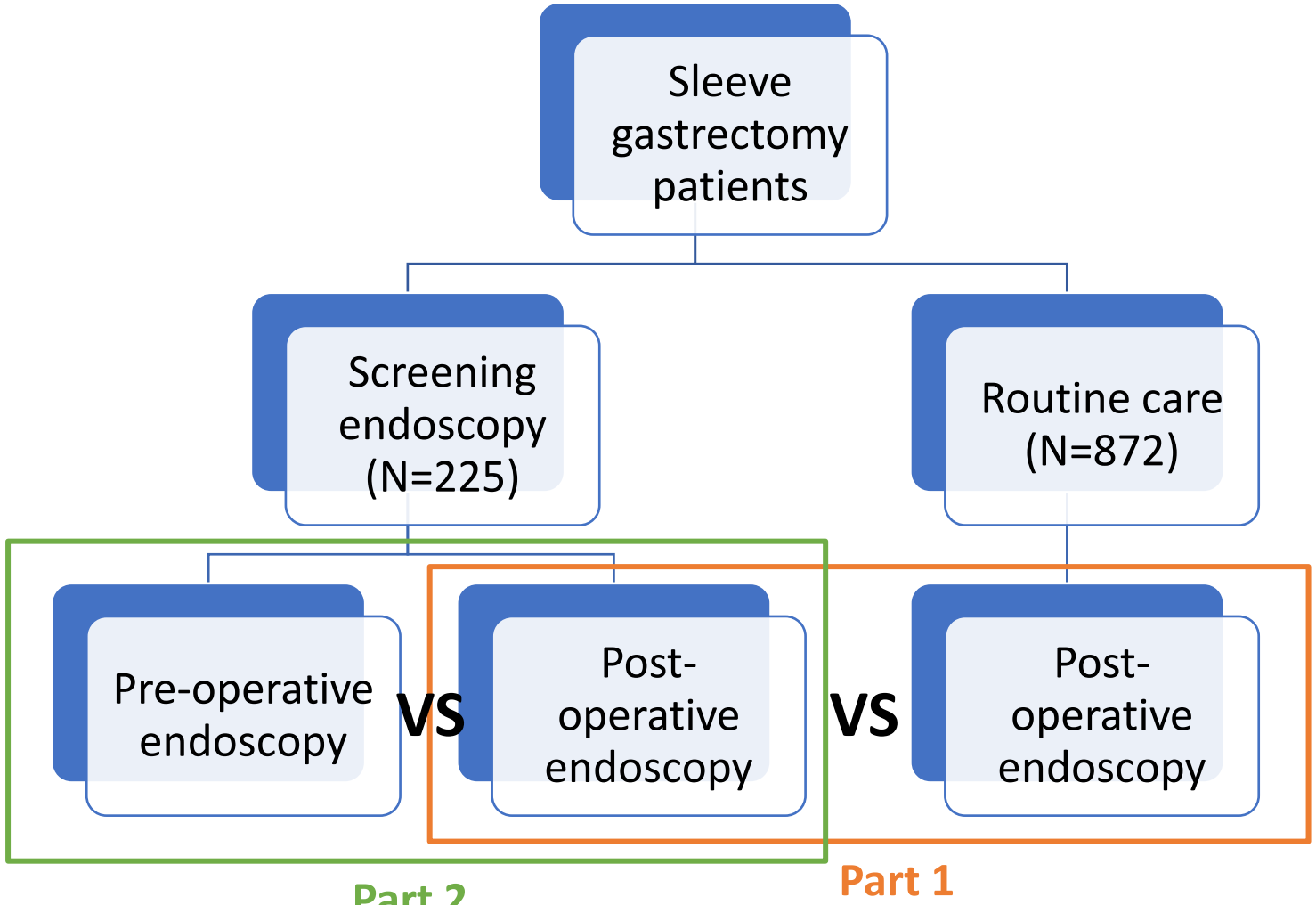
Study rationale: Should we perform routine screening endoscopy prior to bariatric surgery?

- No controlled trials with defined outcome measures undertaken to demonstrate a clinical benefit of screening endoscopy prior to sleeve gastrectomy.
- There is the potential for harm, cost and an unknown number needed to treat.

Aims

- To determine whether the use of pre-operative screening endoscopy results in material and minor changes to the surgical plan.
- To determine the prevalence of de novo Barretts and the outcome of patients with pre-operative Barretts post-SG

Methods



ORIGINAL ARTICLE

Tubularized and Effaced Gastric Cardia Mimicking Barrett Esophagus Following Sleeve Gastrectomy

Protocolized Endoscopic and Histological Assessment With High-resolution Manometry Analysis

Box 1 Endoscopic bariatric assessment protocol

PRE-OPERATIVE ENDOSCOPY ASSESSMENT

- Indications for pre-operative screening endoscopy (if no endoscopy performed in previous two years):
- >150 kg or BMI > 50 kg/m^2.
- Central or metabolic obesity.
- Male age > 40 years.
- Female age >50 years.
- Cigarette smoking history >10 years.
- Dysphagia or other unexplained upper gastro-intestinal symptoms.
- Significant reflux (>5-year history of reflux and or >twice weekly medication use).
- History of peptic ulcer disease.
- History of Barrett esophagus.
- Undergoing gastric bypass.
- Previous gastric, esophageal or bariatric surgery.

POST-OPERATIVE ENDOSCOPY ASSESSMENT

- One year post-operatively, then a minimum of every three years.
- Secondary sleeve gastrectomy (previous gastric band) - yearly.
- Barrett esophagus - 40 mg pantoprazole daily and annual surveillance endoscopy.
- Esophagitis Los Angeles (LA) grade B and above[28] - 20 mg pantoprazole daily and repeat gastroscopy in 1 year.
- Esophagitis LA Grade A - repeat gastroscopy in 2 years.

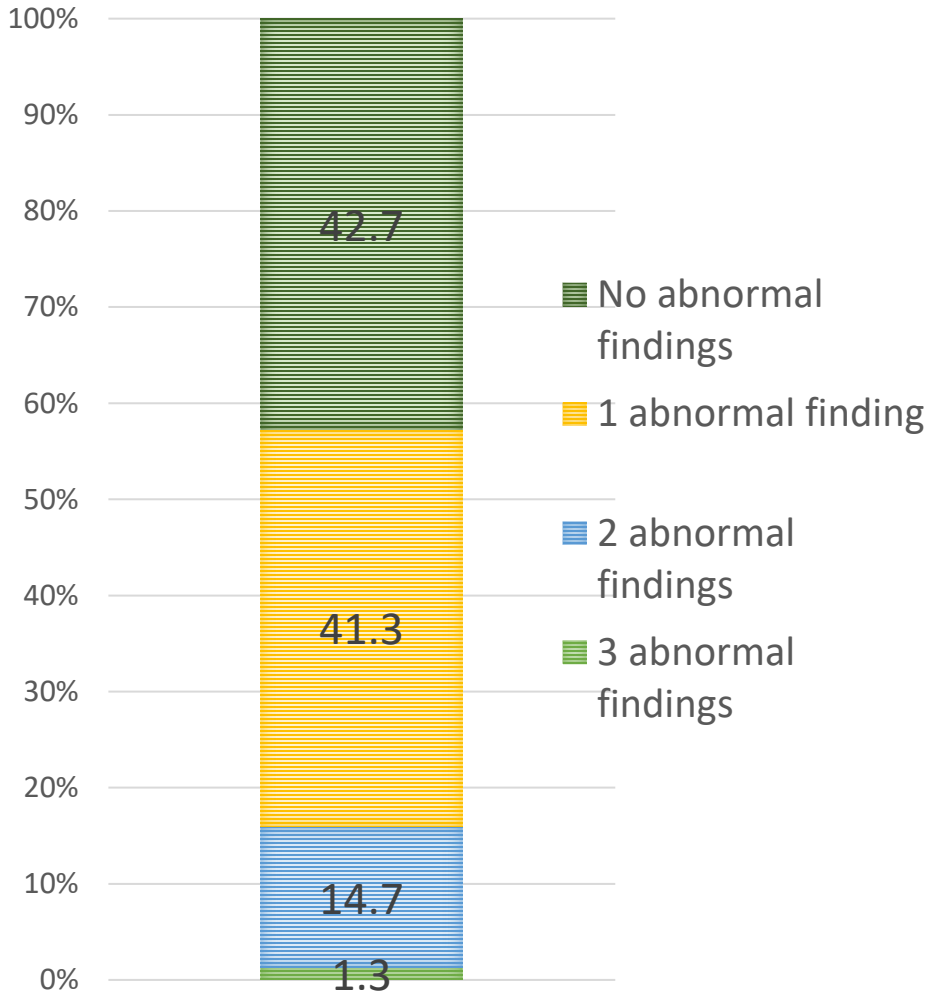
Demographics

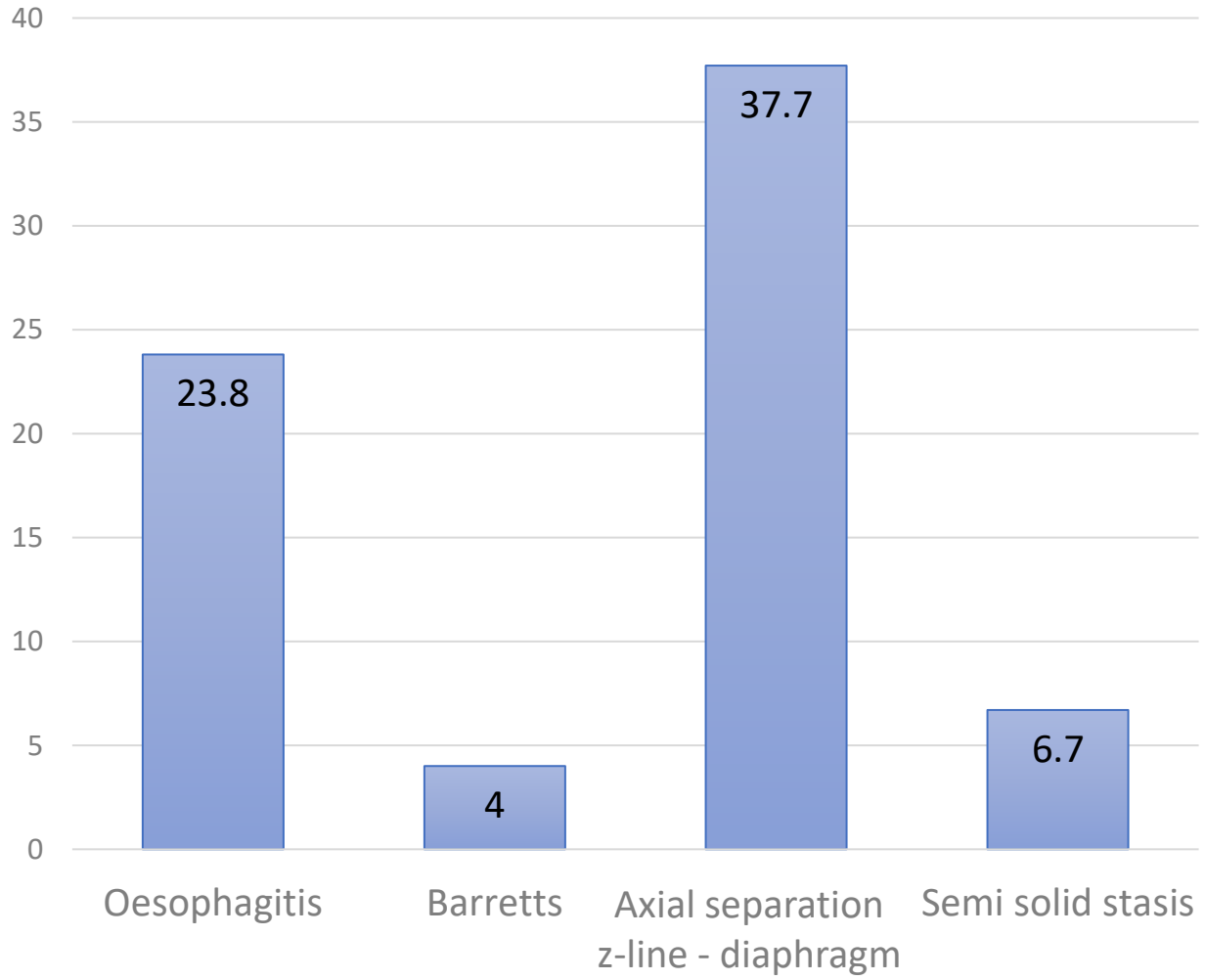
	Routine care	Screening endoscopy	p-value
Age, years	44.0 ± 11.4	49.8 ± 10.5	<0.001 *
Male gender, n (%)	40 (11.9)	45 (30.0)	<0.001 ^
Preoperative weight, kg	123.5 ± 23.8	128.6 ± 23.1	0.042 *
Preoperative BMI, kg/m^2	44.8 ± 7.6	45.4 ± 7.2	0.420 *
Preoperative symptomatic reflux, n (%)	80 (22.7)	42 (28.0)	0.003 ^
Preoperative PPI use, n (%)	73 (20.7)	34 (22.7)	0.068 ^

Part 1

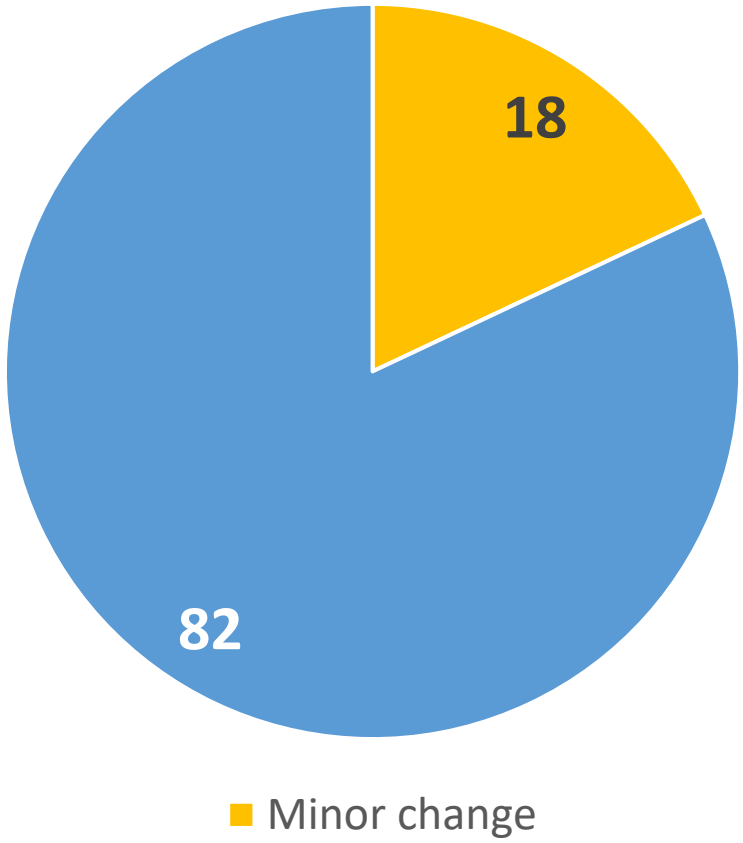
Post-operative outcome routine care vs screening endoscopy

Abnormal findings on screening endoscopy





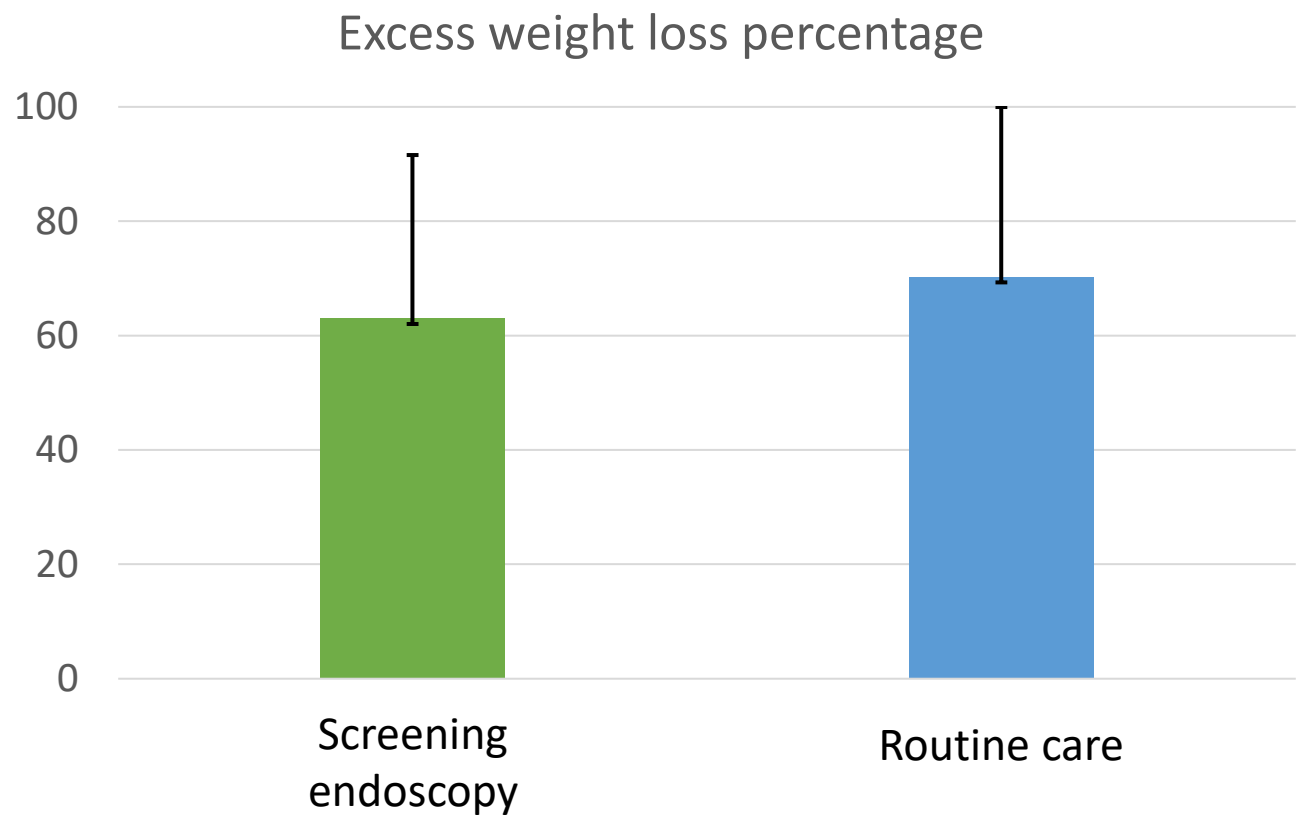
Changes to the operative plan based on screening endoscopy



- All patients underwent sleeve gastrectomy.
- Minor changes to to operative plan occurred in 18% including alteration of fasting protocol and PPI. Only 3 patients had concurrent hiatus hernia repair.

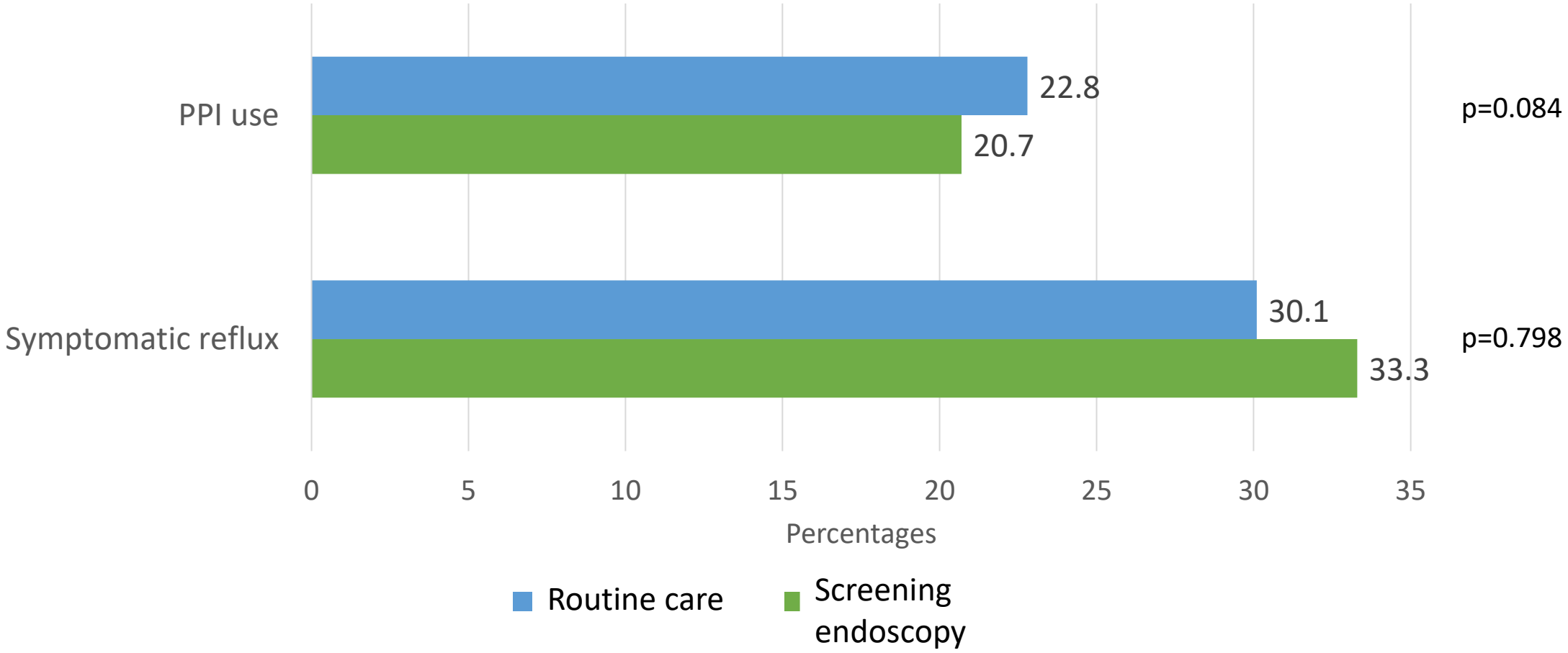
Clinical outcomes – screening endoscopy vs routine care

- Duration of follow-up median 13.5 months.

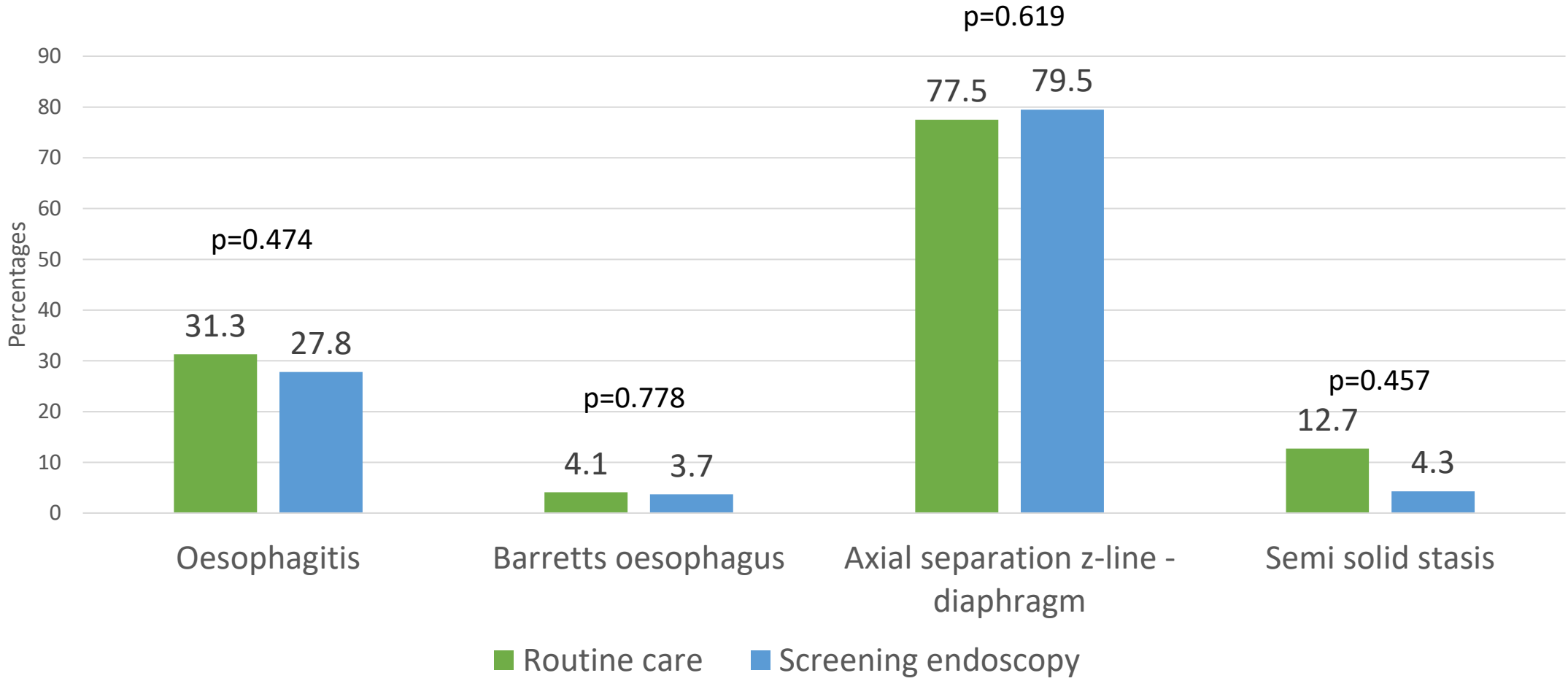


p<0.001

Clinical outcomes - screening endoscopy vs routine care



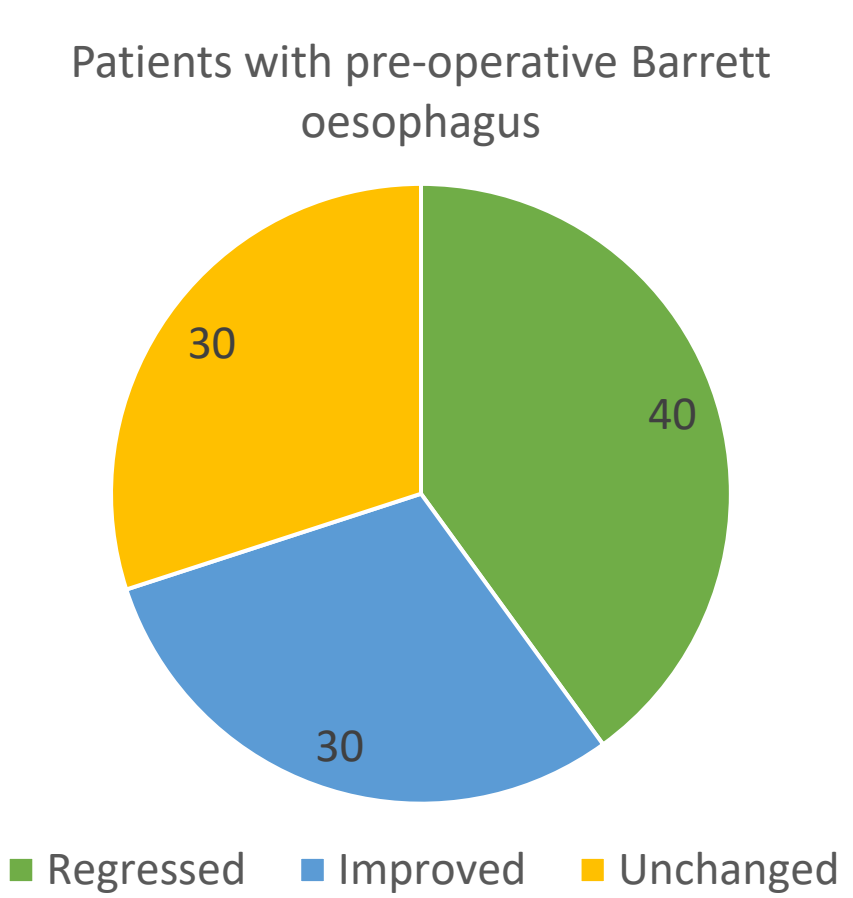
Post-op endoscopy - screening endoscopy vs routine care

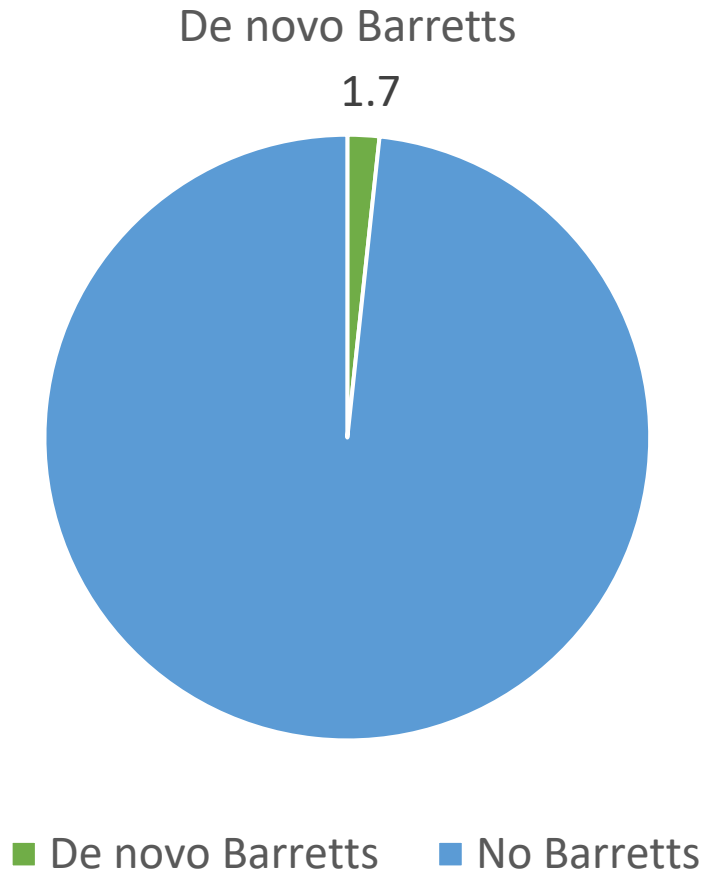


Part 2

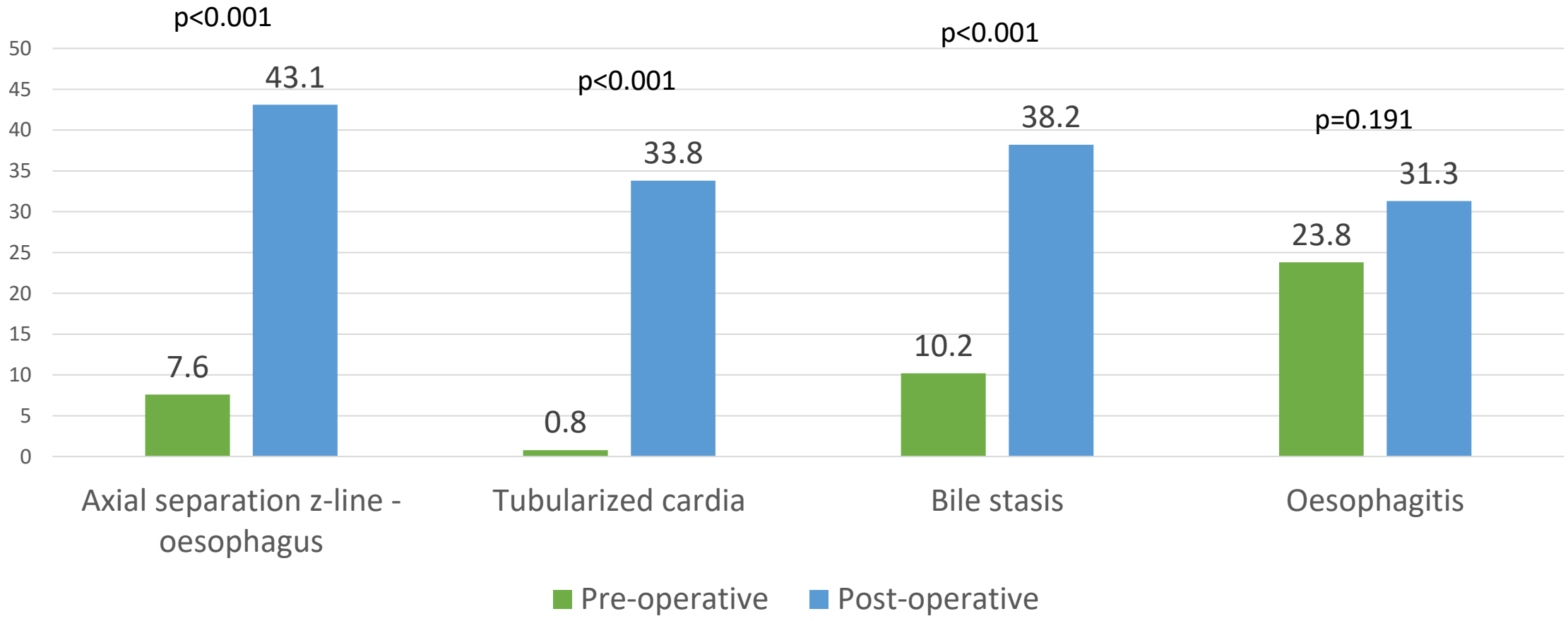
Matched pre-operative and post-operative endoscopy findings

Barrett oesophagus





Endoscopic outcomes – pre-op vs post-op (screening endoscopy cohort)



Conclusion

- Screening endoscopy in high-risk patients identified abnormalities in 47.3% of patients but did not significantly change operative management.
- Post-operative endoscopic outcomes were favourable regardless of having pre-operative endoscopy.
- There was no advantage to screening endoscopy and no disadvantage to not performing it either. Therefore, selective pre-operative endoscopy screening for those symptomatic or high-risk for Barrett oesophagus maybe more helpful.
- The rates of Barrett oesophagus remained low at 13 months post-operative with some regressed and improved post-operative. This does not support the notion of sleeve gastrectomy causing an accelerated progression to Barretts.
- Early postoperative surveillance is of limited value and longer-term endoscopic follow-ups should be considered.

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Acknowledgement

Monash University Department of Surgery

- Prof Wendy Brown
- Mr Paul Burton
- Ms Anagi Wickremasinghe
- Ms Cheryl Laurie
- Ms Julie Playfair
- Ms Kalai Shaw

Royal Melbourne Hospital Department of Gastroenterology

- Prof Geoff Hebbard

A partnership between:

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