IMPACT OF BARIATRIC SURGERY-INDUCED WEIGHT LOSS ON MESORECTAL FAT AREA (MFA)

Talal M. Hijji MD, Anna Wang MD, Sender Liberman MD, Julio F Fiore Jr. PhD, Amin Andalib MD MSc, Lawrence Lee MD PhD[1-2]

1. Colon and Rectal Surgery, Department of Surgery, McGill University Health Centre

2. Steinberg-Bernstein Centre for Minimally Invasive Surgery and Innovation, McGill University Health Centre, Montreal, QC, Canada

Key message: Bariatric surgery-induced weight loss may significantly reduce MFA, especially in the first 6 months after surgery. Beyond 6 months, MFA stabilizes despite ongoing weight.

Background:

- Total mesorectal excision (TME) quality is critical for optimal outcomes in mid- and low-rectal cancer.
- Larger mesorectal fat area (MFA) is associated with increased surgical difficulty and a higher risk of recurrence.
- Interventions to reduce MFA remain unexplored.
- This study evaluates the impact of bariatric surgery-induced weight loss on MFA
- Preoperative bariatric surgery could lower surgical difficulty in rectal cancer patients undergoing TME and potentially decrease complications.

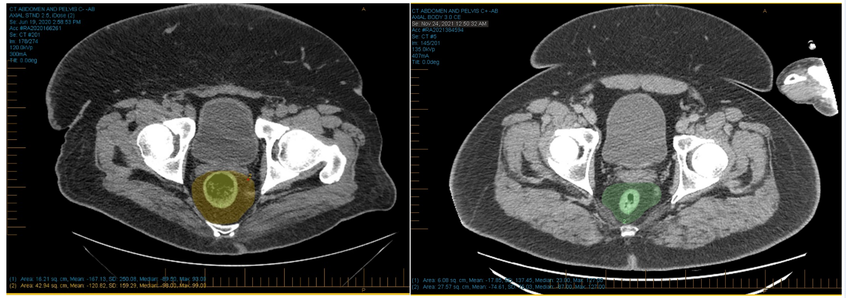
Methods:

- Study design: Retrospective review (2018-2023)
- Inclusion criteria:
  - Elective bariatric surgery patients with postoperative complications
  - CT scans available perioperative and follow up at 1-6 months, 6-12 months or 12+ months

Measurements:

- MFA is defined as the mesorectal package area minus the rectal area at the level of the ischial spine
- Measured free hand using dedicated software

Figure 1: Example measurements of MFA on CT scan



Results:

- Patients reviewed: 250 charts → 25 met criteria
- Baseline data:
  - Pre-OP BMI: 46.2 kg/M^2 (SD 10.3)
  - Pre-OP MFA: 20.0 cm^2 (SD 6.4)
- Key findings:
  - At 1-6 months
    - EWL: 33. 1% ($p < 0.001$)
    - MFA reduction: 5.1 cm2 (23%) ($P < 0.001$)
  - At 6-12 months and 12+ months
    - EWL continued to decrease 47.2% and 80.2%, respectively ($p<0.001$)
    - MFA remained relatively stable: 22% and 26% (P=0.07)

Table 1: Summary of results

	Pre weight loss			1-6 months						6-12 months						>12 months					
Average:	n=	BMI	MFA	n=	BMI	MFA (cm2)	MFA decrease (Absolute)	MFA decrease (%)	%EWL	n=	BMI	MFA (cm2)	MFA decrease (Absolute)	MFA decrease (%)	%EWL	n=	BMI	MFA (cm2)	MFA decrease (Absolute)	MFA decrease (%)	%EWL
All	25	46.2	20.86	11	39.6	17.7	5.04	23	33.06	5	36.9	15.65	4.75	22	47.2	17	29.9	14.3	5.38	26	80.2
Females	19	45.2	19.74	7	38.3	15.51	5.00	26	34.58	2	36	11.96	6.28	44	42.8	14	29.6	14.07	5.17	25	83
Males	6	49.4	24.4	4	42	21.53	5.11	18	30.39	3	37.5	18.12	2.06	7	50.2	3	31.1	15.35	6.34	22	67.1