Body composition's impact on MAFLD resolution: insights from bariatric surgery in an Eastern-Asian context

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- Visceral fat is directly associated with liver inflammation and fibrosis independent of insulin resistance and hepatic steatosis.

- Visceral fat should therefore be a central target for future interventions in nonalcoholic steatohepatitis and indeed all metabolic disease.

- This study aims to investigate the potential influencing factor of body composition and MAFLD resolution.

Liver-kidney contrast

Bioelectrical Impedance Analysis

van der Poorten D, *Hepatology*. 2008;48(2):449-457.

- Our retrospective study analyzes patient data from an Asian center specializing in weight management, spanning August 2016 to October 2023.

- We examined 208 consecutive patients who underwent bariatric procedures, including laparoscopic sleeve gastrectomy (LSG) and laparoscopic Roux-en-Y gastric bypass (LRYGB), at our advanced medical facility.

- The study focused on 63 individuals with severe obesity who were evaluated using abdominal ultrasound and body composition analysis one year following surgery. (40 LSG and 23 LRYGB)

Table1 Demographic				
	Total （n=63)	LSG (n=40)	LRYGB (n=23)	*P* value
Age (years)	37.02 ± 10.60	35.3 ± 9.04	40 ± 12.54	0.124
Body height (cm)	168.29 ± 8.99	168.4 ± 9.75	168.1 ± 7.69	0.901
Body weight (kg)	120.24 ± 24.52	113.70 ± 20.01	131.63 ± 27.76	0.004
BMI (kg/m2)	42.37 ± 7.48	39.94 ± 4.96	46.60 ± 9.20	0.003
Preoperative body fat (%)	46.66 ± 7.15	45.95 ± 5.90	47.90 ± 8.93	0.354
Preoperative trunk fat (kg)	24.20 ± 4.30	23.62 ± 3.99	25.20 ± 4.72	0.16
Preoperative visceral fat area (VFA)(cm^2)	227.42 ± 35.63	227.02 ± 30.96	228.1 ± 43.34	0.909
Preoperative skeletal muscle mass	35.64 ± 7.67	34.58 ± 7.89	37.48 ± 7.08	0.149
Body weight 12 months after surgery	86.11 ± 17.58	84.11 ± 18.73	89.67 ± 15.08	0.238
Body fat 12 months after surgery(%)	33.81 ± 9.04	34.07 ± 7.80	33.36 ± 11.01	0.792
Trunk fat 12 months after surgery (kg)	16.01 ± 13.59	16.97 ± 16.55	14.35 ± 5.68	0.476
VFA12 months after surgery（cm2)	136.2 ± 47.94	133.98 ± 45.15	140.04 ± 53.31	0.641
Skeletal muscle mass 12 months after surgery	31.30 ± 7.50	30.81 ± 8.36	32.14 ± 5.87	0.514

	Fatty liver improved		Fatty liver resolution	
	F	*P* value	F	*P* value
Gender	1.766	0.164	1.134	0.291
Age	1.249	0.3	2.035	0.159
Body Weight	3.302	0.026	6.998	0.01
Preoperative diabetes mellitus	0.783	0.508	0.138	0.711
Preoperative body fat (%)	1.455	0.236	4.494	0.038
Preoperative trunk fat (kg)	3.799	0.015	10.669	0.002
Preoperative Visceral Fat Area (VFA)（cm2)	6.48	<.001	16.085	<.001
Preoperative skeletal muscle mass (kg)	1.051	0.377	1.034	0.313

	Univariate Regression Analysis		Multivariate Regression Analysis	
	95% CI	*P* value	95% CI	*P* value
Body Weight (kg)	0.002±0.012	0.011	-0.005±0.01	0.447
Preoperative Body fat(%)	0.001±0.036	0.038	-0.04±0.013	0.303
Preoperative trunk fat (kg)	0.017±0.073	0.002	-0.067±0.049	0.759
Preoperative Visceral Fat Area (VFA) (cm^2)	0.003±0.01	<.001	0.002±0.015	0.016

- Our findings emphasize the critical role of visceral fat reduction in the remission of MAFLD following bariatric surgery in Eastern-Asian populations.

- The study confirms bariatric surgery's effectiveness in treating obesity-induced liver conditions and highlights the significance of targeting visceral adiposity.

- These results advocate for more research to develop tailored treatment strategies that improve MAFLD outcomes, thus enhancing the surgical management of liver diseases.