

# 修正性减重手术的发展和反思

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**【摘要】** 肥胖症是目前具有挑战性的全世界公共卫生问题之一。我国>50%的成人存在超重或肥胖症。肥胖症已被证实为2型糖尿病、心脑血管疾病、结肠癌及其他特定恶性肿瘤的危险因素, 严重威胁国人健康及生命质量。近20年来, 随着减重手术的成熟发展, 其对治疗肥胖症及其相关代谢性疾病的疗效及安全性得到广泛认可, 同时提高患者预期寿命和生命质量。然而, 部分减重手术后患者需行修正性减重手术, 修正性减重手术率为5%~50%。修正性减重手术原因主要为减重效果不佳, 包括体质量下降不明显、体质量反弹及相关代谢性疾病未得到明显改善甚至复发, 其他原因还包括贫血、营养不良、长期慢性疼痛等。目前国内仅有中国医师协会外科医师分会肥胖和糖尿病外科医师委员会2018年提出的修正性减重手术东亚专家共识, 临床实践中关于修正性减重手术的适应证、禁忌证、手术方式等仍无统一标准。笔者总结修正性减重手术的最新研究进展, 旨在为临床实践提供指导价值。

**【关键词】** 肥胖症; 减重手术; 修正手术; 发展; 反思

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## Development and reflection of revisional bariatric surgery

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**【Abstract】** Obesity is one of the most challenging global public health issues, and more than half of adults in China are overweight or obese. Obesity has been shown to be a risk factor for type 2 diabetes, cardiovascular disease, colon cancer and other specific cancers, and has become a serious threat and even a danger to the health and quality of life of the nation. With the mature development of bariatric surgery in the last 20 years, it is now widely recognized for its effectiveness and safety in the treatment of obesity and related metabolic diseases, as well as improving patients' life expectancy and quality of life. However, previous data from the literatures suggest that some patients require revisional surgery after bariatric surgery, with the incidence of revisional bariatric surgery as 5% to 50%. The main reasons for revisional bariatric surgery are poor post-operative outcomes, including the lack of significant weight loss, weight regain and no significant improvement or even recurrence of associated metabolic disease, and other reasons include the development of anaemia, malnutrition and long-term chronic pain. Currently, there is only the East Asian expert consensus on revised bariatric surgery proposed by Chinese Society for Metabolic & Bariatric Surgery in 2018. However, there are still no uniform standards regarding the indications, contraindications and surgical modalities of revisional bariatric surgery in clinical practice. The authors summarize the latest researches of revisional bariatric surgery, in order to provide the guidance value for clinical practice.

**【Key words】** Obesity; Bariatric surgery; Revisional surgery; Development; Reflection

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自 20 世纪 90 年代以来,我国超重和肥胖症发病率快速上升。目前中国超重和肥胖症人数居全世界首位,严重影响国人健康及社会发展<sup>[1-2]</sup>。减重手术是治疗严重肥胖症及其相关并发症的最有效方式,具有减重效果长久、安全性好等优点<sup>[3-5]</sup>。但部分患者初次减重手术后出现体质量反弹、糖尿病复发等问题,需行修正性减重手术<sup>[6-7]</sup>。笔者总结修正性减重手术的最新研究进展,旨在为临床实践提供指导。

### 一、修正性减重手术的原因及指征

修正性减重手术是指由于各种原因引起的再次行减重手术,其指征主要有减重效果不明显或术后复胖,肥胖相关合并症如 2 型糖尿病等改善效果不明显或术后复发,手术以及营养相关性并发症(如出血、吻合口漏、吻合口边缘溃疡、吻合口狭窄、反流性胃炎等)<sup>[8-10]</sup>。多数减重手术无需再次手术,然而,修正性减重手术占减重手术总数量的比例日益增加,目前为 7%~15%<sup>[11-13]</sup>。减重手术后患者复胖的危险因素主要有术前 BMI>50 kg/m<sup>2</sup>、术后对饮食运动指导依从性差、术后抑郁等<sup>[14]</sup>。目前国内外对于复胖标准尚未达成共识,现有评估患者减重手术后复胖的常见标准包括:(1)体质量下降至最低点后,多余体质量减轻(excess weight loss, EWL)百分比反向增加>25%,或 BMI 增加>5 kg/m<sup>2</sup>,或体质量增加>10 kg。(2)EWL 百分比由>50% 变为≤50% 或 BMI>35 kg/m<sup>2</sup>等<sup>[14]</sup>。2 型糖尿病复发也是行修正性减重手术的重要原因之一,复发标准通常是患者在减重手术后 1 年出现糖化血红蛋白水平持续>6.5%<sup>[15]</sup>。

袖状胃切除术(sleeve gastrectomy, SG)和 Roux-en-Y 胃旁路术(Roux-en-Y gastric bypass, RYGB)是国内外最常见的 2 种减重手术方式<sup>[16]</sup>。目前不同研究中关于减重手术后因各种原因再行修正性减重手术的概率数据差异较大。1 项纳入 217 例肥胖症患者的研究结果显示:约 60% 的患者行减重手术 2 年后体质量下降的同时部分或完全缓解糖尿病进展。但其中近 1/5 的患者在 6 年随访中出现复胖或糖尿病复发<sup>[17]</sup>。此外,多项研究结果显示:部分患者行 RYGB 及 SG 后 3 年内实现体质量下降及糖尿病完全缓解,然而约 40% 的患者在 6 年随访期内出现复胖或糖尿病复发<sup>[18-20]</sup>。有更长的随访研究结果显示:约 33% 的患者 SG 后 10 年内因复胖或胃食管反流需再次手术,而 RYGB 后复胖发生率高达 25%~30%<sup>[21]</sup>。另有 Meta 分析结果显示:SG 后随访>

7 年时,总体修正性减重手术率达到 19.9%<sup>[22]</sup>。以上研究结果显示:部分肥胖症患者行减重手术后仍可能因复胖或糖尿病复发等多种原因行修正性减重手术。因此,修正性减重手术是减重手术的重要组成部分,是解决初次减重手术后复胖和糖尿病复发等问题的关键。

### 二、修正性减重手术的术前评估

充分的术前评估是成功施行修正性减重手术的关键。常见的术前评估包括体格检查、胃镜、上消化道钡剂造影、CT 三维重建检查等<sup>[10,23-24]</sup>。临床医师需全面回顾患者初次减重手术史及相关检查检验报告,详细了解术后生活方式、饮食结构等。尤其应评估患者营养状况,并补充现有不足。虽然蛋白质缺乏是减重手术后最常见的大营养素缺乏,但 12 种微量元素的缺乏也同样常见,应在行修正性减重手术前予以纠正<sup>[25]</sup>。精神心理因素是影响减重手术后复胖的重要因素之一,因此,心理评估和干预也是决定修正性减重手术是否有效的关键,建议作为常规评估项目之一<sup>[14]</sup>。

### 三、常见修正性减重手术的特点

#### (一)腹腔镜 SG 后修正性减重手术

腹腔镜 SG 已成为国内治疗肥胖症的首选手术方式,因其高安全性及低死亡率,且相较于其他手术方式,外科医师较易学习<sup>[16]</sup>。腹腔镜 SG 还可显著改善代谢性综合征(如肥胖症合并高血压、糖尿病、血脂异常、阻塞性睡眠呼吸暂停综合征等)。目前普遍认为腹腔镜 SG 后行修正性减重手术的主要原因是复胖及胃食管反流病。但腹腔镜 SG 后复胖的主要机制仍存在争议,多与胃底不完全切除、术后胃窦扩张、切除胃体积不足有关。Tsui 等<sup>[26]</sup>的研究结果显示:首次 SG 后第 5、8 年,患者行修正性减重手术的比例分别为 6.2%、15.3%。而 Lazzati 等<sup>[27]</sup>的研究结果显示:首次 SG 第 5、7、10 年,行修正性减重手术患者比例分别为 4.7%、7.5%、12.2%。即在 10 年随访时间内,每 8 例最初接受 SG 的患者中,1 例行修正性减重手术;SG 后最常见的修正性减重手术是 RYGB(75.2%),其次为再次行 SG(18.7%),其他方式为胆胰旷置胰十二指肠转位术。

#### (二)腹腔镜 RYGB 后修正性减重手术

腹腔镜 RYGB 后多种修正性减重手术方式可选择。1 项 5 年随访研究结果显示:胆胰旷置胰十二指肠转位术作为腹腔镜 RYGB 的修正性减重手术比其他手术方式具有更显著的减重效果<sup>[28]</sup>。其原理仍为限制部分食物摄入和吸收,具有解决再次

复胖的潜力。但目前关于胆胰旷置胰十二指肠转位术长期并发症相关数据较少,尚需进一步研究。Angrisani 等<sup>[29]</sup>的研究结果显示:RYGB 后修正性减重手术选择 SG 联合单吻合口十二指肠回肠旁路术和胆胰旷置胰十二指肠转位术后 18 个月和 24 个月的平均 EWL 百分比分别为 56.0% 和 56.4%。此外, Moon 等<sup>[30]</sup>的研究结果亦显示:RYGB 后修正性减重手术选择 SG 联合单吻合口十二指肠回肠旁路术和胆胰旷置胰十二指肠转位术的减重效果显著,且对于行 RYGB 后仍难以控制的 2 型糖尿病患者效果显著。但同时也有可能出现营养不良的问题,尚需进一步研究结果评估其安全性。

#### 四、修正性减重手术的利弊

与初次减重手术比较,修正性减重手术能有效再次减轻体质量,同时可改善肥胖症及其相关代谢性疾病,如减少使用 2 型糖尿病药物和全面控制血糖<sup>[31-33]</sup>。对于初次减重手术后仍有代谢综合征疾病的患者,应予以评估是否需行修正性减重手术。Koh 等<sup>[34]</sup>的 Meta 分析结果表明:修正性减重手术后 92% 的糖尿病患者得到改善,其中 50% 达到完全缓解;81% 患者高血压得到改善,其中 33% 的患者达到完全缓解,而各种修正性减重手术中胆胰旷置胰十二指肠转位术后患者改善比例最高。修正性减重手术对肥胖症相关代谢性疾病有积极作用,并支持将其用于治疗肥胖症合并复发或难治代谢性疾病,但修正性减重手术后对于代谢性疾病得到改善和缓解的机制尚不明确,有待更进一步追踪。

与任何再手术一样,修正性减重手术有较高并发症发生率。Axer 等<sup>[35]</sup>的研究结果显示:修正性减重手术术中及术后并发症发生率较高,尤其是开腹修正性减重手术。与初次减重手术比较,修正性减重手术与更长手术时间、更长住院时间、更高 30 d 内再入院率以及更高计划外 ICU 入院率有关,且术中由腹腔镜手术中转为开腹手术的发生率较高<sup>[36]</sup>。修正性减重手术并发症的评估和处理与初次手术患者的处理一致。然而,由于并发症发生率可能更高,因此,患者的围手术期管理以及对早期症状的辨别尤为重要。

#### 五、结语

随着肥胖症发病率的不断增加,减重代谢外科蓬勃发展。而减重手术无疑是治疗肥胖症及其相关疾病的有力工具,修正性减重手术数量将继续增加<sup>[37]</sup>。由于粘连和组织增厚,修正性减重手术对于外科医师的技术要求较高,且围手术期并发症风险

明显增加,需由经验丰富的多学科团队确保围手术期管理。目前,尚无针对修正性减重手术的标准适应证,对于再次手术的各项策略亦无明确共识。目前关于修正性减重手术的报道有限,且研究纳入患者较少,随访时间较短,尚需多中心研究数据及长期随访结果。

外科医师行修正性减重手术前,应该对患者进行全面检查,通过影像学辅助检查设备对患者解剖的改变进行评估、对患者目前的主观感觉及客观表现详实描述。未来,对任何减重代谢外科医师,提高修正性减重手术质量是重要挑战。笔者相信:通过每位减重代谢外科医师的努力,修正性减重手术能够安全、精准、规范化发展,给更多患者带来福音。

**利益冲突** 所有作者均声明不存在利益冲突

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