

# 肩袖疾病与睡眠障碍关系的研究进展

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**摘 要** 肩袖疾病临床较为常见, 睡眠障碍是患者的主诉之一, 但不容易引起重视, 因为肩袖疾病的主要症状是肩部疼痛及功能障碍, 其临床治疗也多侧重于减轻肩部疼痛、恢复肩关节功能。引起肩袖疾病患者睡眠障碍的原因较多, 夜间疼痛是较为常见的一种。目前有关肩袖疾病与睡眠障碍关系的报道较为少见, 两者是否存在关联尚未有定论。本文从肩袖手术、炎症因子及褪黑素、肩袖撕裂程度、睡眠姿势 4 个方面, 对肩袖疾病与睡眠障碍关系的研究进展进行了综述。

**关键词** 肩关节; 肩袖损伤; 睡眠障碍; 综述

肩袖由冈上肌、冈下肌、肩胛下肌和小圆肌的肌腱构成, 在肱骨头解剖颈处形成袖套样结构。肩袖疾病的发病机制较为复杂, 与肌腱炎、滑囊炎及肩袖撕裂等有关, 临床常表现为肩部疼痛及运动功能障碍。睡眠障碍是肩袖疾病患者的主诉之一, 但容易被临床忽视。睡眠障碍临床较为常见, 约 35% 的普通人群存在睡眠障碍, 其中又以失眠最为多见<sup>[1-5]</sup>。失眠不仅与内分泌、代谢及神经系统紊乱有关<sup>[6-7]</sup>, 也与环境、心理、社会行为、认知、情感及遗传因素等有关<sup>[8-10]</sup>。疼痛可引起睡眠障碍, 而睡眠障碍可引起消极的情绪、行为和认知<sup>[11-15]</sup>。有研究发现, 肩袖撕裂患者的睡眠障碍发生率是普通人群的 3~6 倍<sup>[16-17]</sup>, 即使经过肩袖修复术治疗, 术后 41% 的患者仍存在睡眠障碍<sup>[18-19]</sup>。目前有关肩袖疾病与睡眠障碍关系的报道较为少见, 两者是否存在关联尚未有定论。为此, 本文对肩袖疾病与睡眠障碍关系的研究进展进行了综述, 以期为后期相关研究提供参考。

## 1 肩袖手术

肩袖疾病非手术治疗无效时多采用手术治疗, 而肩袖手术可能与肩袖疾病患者睡眠障碍有关。Austin 等<sup>[16]</sup>采用肩关节镜修复术治疗肩袖撕裂患者 56 例, 并采用匹兹堡睡眠质量指数 (Pittsburgh sleep quality index, PSQI)<sup>[20]</sup>等对治疗结果进行了评价 (PSQI 分值越高睡眠障碍越严重), 发现术后患者的 PSQI 分值较术前明显降低, 且能持续 6 个月左右, 但之后约 38% 的患者仍然存在睡眠障碍。这与 Horneff 等<sup>[18]</sup>的研究结果相似, 后者研究发现肩袖疾病患者术后 6 个月

的 PSQI 评分虽然降低, 但其中仍有 41% 的患者存在睡眠障碍。Serbest 等<sup>[20]</sup>对 31 例行肩袖修复术的患者进行了相关研究, 发现 PSQI 评分术前 7~17 分 (中位数 15 分)、术后 3~10 分 (中位数 6 分), 由此认为肩袖修复术可以改善患者的睡眠质量, 有利于提高其生活质量。Khazzam 等<sup>[17]</sup>对 391 例接受手术治疗的肩袖疾病 (肌腱炎 274 例、肩袖撕裂 117 例) 患者进行了相关研究, 发现其中约 91% 的患者存在夜间疼痛, PSQI 与肩袖疾病的病情严重程度无明显关联, 但 PSQI 与患者的疼痛程度、情绪 (抑郁)、性别 (女性)、合并症 (糖尿病) 及体质指数等有关。

## 2 炎症因子及褪黑素

研究发现, 肩袖撕裂患者的肩部疼痛及活动受限与相关炎症因子水平升高有关, 如白细胞介素 (interleukin, IL) - 1a、IL - 1b、IL - 6、肿瘤坏死因子 (tumor necrosis factor, TNF) -  $\alpha$ 、环氧合酶 - 1 等<sup>[21-29]</sup>。也有研究发现, 褪黑素与肩袖疾病存在关联 (褪黑素具有调节免疫、改善睡眠等作用)<sup>[30-33]</sup>。Ha 等<sup>[34]</sup>研究发现, IL - 1b 和 TNF -  $\alpha$  可以刺激褪黑素受体基因的表达, 并且肩袖疾病患者的肩关节囊及肩袖撕裂处褪黑素含量均增加。夜间和清晨褪黑素分泌量较多, 可能会激活或加强炎症反应, 这可能就是夜间疼痛程度加重的原因。Shih 等<sup>[35]</sup>研究发现, 肩袖撕裂患者的肩关节周围滑囊内 IL - 1 $\beta$  水平与肩部疼痛及运动受限程度呈正相关, 基质金属蛋白酶 (matrix metalloproteinase, MMP) - 1 和 MMP - 13 水平与肩袖撕裂程度有关。

## 3 肩袖撕裂程度

对肩袖撕裂程度进行分级有利于准确治疗, 目前

肩袖撕裂程度尚无统一分级标准。Gumina 等<sup>[36]</sup>将肩袖撕裂程度分为 4 级,发现肩袖撕裂程度较低患者的 PSQI 高于肩袖撕裂程度较高者,且前者的肩部疼痛视觉模拟量表评分也高于后者;肩袖撕裂程度较高患者的入睡时间更短、睡眠干扰更少,可能与其肩关节周围滑囊内炎症因子相对较少、肩袖撕裂处的痛觉感受器发挥作用等因素有关。

#### 4 睡眠姿势

人类每天约有 1/3 的时间用于睡眠,不同的睡眠姿势会对肩部产生不同的影响,可能造成肩峰下压力改变,进而影响局部的血液循环,对肩袖疾病患者的术后恢复造成不良影响。Werner 等<sup>[37]</sup>对 4 种睡眠姿势(仰卧位双手置于身体两侧、仰卧位双手交叉置于脑后、侧卧位、俯卧位)的肩峰下压力进行了观察,发现仰卧位双手置于身体两侧睡眠时肩峰下压力最小,这可能是肩袖疾病患者术后睡眠的最佳姿势。Holdaway 等<sup>[38]</sup>研究发现,肩袖撕裂患者的睡眠障碍与睡眠姿势无明显关联。

#### 5 小 结

虽然肩袖疾病的主要症状是肩部疼痛和活动功能障碍,但随着人们生活质量的提高,其治疗要求也相应提高,睡眠障碍的问题亟需解决。多数肩袖疾病患者的 PSQI 评分较高,说明其存在睡眠障碍,但肩袖疾病与睡眠障碍的相关性目前尚无研究证实。接受手术治疗的肩袖疾病患者术后睡眠障碍较术前明显改善,且能持续 6 个月左右,在此之后虽然仍有 38% ~ 41% 的患者存在睡眠障碍,但这与普通人群睡眠障碍的发生率较为接近,这可能与术中使用麻醉剂、术后使用镇痛药及患者心理状态发生改变等有关;但术后睡眠改善情况为何能持续 6 个月左右还有待进一步研究。肩部疼痛与炎症因子水平升高有关,肩袖撕裂患者的关节囊及肩袖撕裂处的炎症因子水平升高,可以刺激褪黑素受体基因的表达,而褪黑素在夜间至凌晨分泌量较大,可能会激活或加强炎症反应,因此夜间疼痛相对严重,可能会对睡眠产生影响。有关肩袖撕裂程度与睡眠障碍关系的研究较为少见,两者的关系有待进一步研究。睡眠姿势会影响肩峰下压力,肩袖疾病患者术后可采用仰卧位双手置于身体两侧的睡眠姿势,减小肩峰下压力,避免影响患肢功能恢复。总之,肩袖手术、炎症因子及褪黑素、肩袖撕裂程度、睡眠姿势均可能与肩袖疾病患者睡眠障碍有关,但具

体关联如何,仍需进一步深入研究。

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