

超声下 TAPB 联合 RSB 在减重手术中的应用

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[摘要] 随着腹腔镜技术和代谢手术的发展,越来越多的肥胖患者接受了代谢手术。腹腔镜胃袖状切除术(LSG)因其相对简单安全的技术和良好的减肥代谢效果而成为最常见的减肥手术。但由于肥胖患者的病理生理改变,术后恶心呕吐、心脏缺血,甚至心肌梗死和呼吸道并发症的风险增加。如何促进术后早期恢复成为临床研究的重点。有研究表明,超声引导下腹横肌平面阻滞(TAPB)和腹直肌鞘阻滞(RSB)可减轻腹部术后疼痛,减少镇痛药物的使用,从而促进患者术后早期恢复^[1,2]。然而,TAPB和RSB在腹腔镜袖状胃切除术中的作用尚无报道。本文就腹横肌平面阻滞和腹直肌鞘阻滞在腹腔镜袖状胃切除术中的应用作一综述。

[关键词] 袖状胃切除术; 腹横肌平面阻滞; 腹直肌鞘阻滞

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Application of TAPB Joint RSB in Weight Loss Surgery under Ultrasound

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[Abstract] With the development of laparoscopic technology and metabolic surgery, more and more obese patients have received metabolic surgery. Laparoscopic sleeve gastrectomy (LSG) has become the most common weight loss surgery because of its relatively simple and safe technology and good weight loss and metabolic effect. However, due to the pathophysiological changes of obese patients, the risks of postoperative nausea and vomiting, cardiac ischemia, even myocardial infarction and respiratory complications are increased. How to promote early postoperative recovery has become the focus of clinical research. Studies have shown that ultrasound-guided transverse abdominis plane block (TAPB) and rectus abdominis sheath block (RSB) can reduce abdominal postoperative pain and reduce the use of analgesic drugs, so as to promote the early postoperative recovery of patients^[1,2]. However, the effects of TAPB and RSB on laparoscopic sleeve gastrectomy have not been reported. This paper will summarize the application of transverse abdominal muscle plane block and rectus sheath block in laparoscopic sleeve gastrectomy.

[Key words] sleeve gastrectomy; transverse abdominal muscle plane block; rectus abdominis sheath block

引言

由于肥胖病人的病理生理改变,围术期管理给麻醉医师带来越来越大的挑战,如何更好的维持肥胖病人术中生命体征的稳定以及术后早期康复,成为近年来麻醉学领域的研究热点,本文对神经阻滞在腹腔镜袖状胃切除术中的应用做了总结概括。

1 肥胖

目前,肥胖已成为世界上日益严重的问题。国外数据^[3]显示,在成人中,男性肥胖率为24%,女性为25%,三级肥胖患病率超过3%。最新的国内数据显示^[4],

在中国成年人中,31.4%超重,12.2%肥胖,27.1%是中央型肥胖:男性超重和肥胖患病率分别为33.7%和13.7%,女性分别为9%和10.7%。肥胖不仅是一种独立的疾病,而且容易与高血压、糖尿病、高脂血症、肥胖症、通气不足综合征、睡眠呼吸暂停综合征、胃食管反流等一系列疾病结合,严重威胁着人类健康。如何成功减肥,改善肥胖相关并发症,降低全因死亡率,已成为研究的重点。

2 减重手术

目前,减肥治疗包括生活方式(饮食

和运动)调整,医疗药物和手术治疗。研究证实,非手术治疗通常可以减轻肥胖患者的体重5%-10%,并在一定程度上改善他们的健康状况。然而,对于大多数病态肥胖患者来说,治疗效果有限,容易反弹^[5]。因此,对于这类患者来说,多学科管理下的减肥手术是减轻体重、减少并发症、延长寿命和提高生活质量的唯一长期有效治疗措施^[6,7]。LSG已成为最常见的减肥手术,因为它相对简单和安全的技术以及良好的减肥和代谢效果^[8]。

3 肥胖患者的术后并发症

随着胃腔变小, LSG后压力增加, LSG后恶心呕吐非常常见。因此, 患者在手术时非常不舒服, 这是手术后最不良的经历。更重要的是, 严重的呕吐会导致心脏粘膜撕裂和胃出血。一项对88名在6年内接受任何减肥手术的患者进行的回顾性队列研究发现, 恶心和呕吐是最常见的并发症之一, 手术后第一个月的发病率为8.7%至9.0%, 通常是年轻人和妇女。这是术后恶心和呕吐的两个独立危险因素, 其他危险因素包括麻醉药物(如阿片类药物、挥发性麻醉剂等)、手术方法等^[9]。

减肥和新陈代谢手术后, 呼吸功能可能受损。原因是: 肥胖导致严重的限制性综合征, 躺下会导致电位; 麻醉期间和麻醉后使用的镇静剂会导致上呼吸道阻塞, 导致术后缺氧血症^[10], 突发胸痛、呼吸困难和氧饱和度降低的患者需要给予足够的关注。血栓并发症是减肥和代谢手术的主要并发症之一, 占死亡原因的50%^[11] LSG患者至少有中度血栓栓塞的风险。除肥胖外, 血栓危险因素还包括老年、吸烟、静脉曲张、OSA、心脏或肺功能受损以及口服雌激素避孕药。

肥胖患者手术后应特别注意镇痛。疼痛管理的目标是确保舒适, 尽快锻炼, 改善肺功能, 而不因过度镇痛引起的呼吸抑郁症。一些研究表明, 腹腔镜手术的患者可能有手术切口疼痛, 腹腔肿胀疼痛, 肩痛和成本疼痛。术后疼痛的高发影响更多患者的预后预后较差。

4 神经阻滞

4.1腹横肌平面阻滞。超声引导下腹横肌平面(TAP)阻滞是一种前腹壁外周神经阻滞(T6到L1), 通过超声引导将局部麻醉剂注射到横向腹部筋膜及其深部肌肉空间中^[12]。目前, 临床采用不同的方法, 如腹外侧入路法、肋下缘入路法和后入路法。根据要实现的麻醉平面选择相应的方法。TAP可用于腹腔镜手术中麻醉和术后镇痛。作为多模式镇痛方案之一, 它可以改善腹部手术的镇痛效果。超声引导可提高神经阻滞的成功率, 降低并发症的发生率。

研究表明, 超声波引导的TAP被广泛用于腹股沟疝修补术^[13], 阑尾切除术^[14],

结直肠癌的根治术^[15]以及腹腔镜妇科手术^[16], 它在手术中具有明显的镇痛效果, 甚至比术后镇痛中的静脉注射或口服镇痛药物还要好。然而, 超声引导的腹外侧入路法仅限于下腹腔和腹部。为了将块范围扩展到上腹部, 还提出了超声波引导肋缘下TAP的方法^[17]。将超声探头平行放置在肋缘下, 从腹中线向外滑动, 从前内侧腹壁穿刺进针, 并在腹直肌和腹横肌之间注射局部麻醉剂。这种方法可以阻断前腹壁约T6-T9的范围。Kitlik等人^[18]一项关于活体供体肝脏右半肝切除术的研究表明, TAP可以减少上腹部手术后吗啡的用量, 并有助于改善镇痛作用。肋缘下TAP方法适用于脐周手术。

4.2腹直肌鞘阻滞。腹直肌鞘阻滞(RSB)是一种在腹直肌和腹直肌鞘之间注射局部麻醉剂, 阻断腹腔之间的神经运行, 并为腹腔、肌肉和皮肤提供腹腔内膜、肌肉和皮肤的镇痛的技术。1899年, 施莱希首次应用它来松弛成年人的前腹壁。1996年, 弗格森等人^[19]将其用于小儿疝修补术。在2006年, 威尔施克等人^[20]率先提出了超声波引导RSB。近年来, 随着超声设备的发展和穿刺技术的成熟, RSB在临床多模型镇痛中备受关注。

腹直肌位于腹部中线的两侧, 由腹直肌鞘包裹。腹直肌鞘前层由腹内斜肌腱膜和腹外斜肌腱膜融合形成。T6~T11肋间神经和肋下神经的前皮支在腹内斜肌和腹横肌之间斜向下运行, 在腹直肌和腹直肌后鞘之间运行, 穿过腹直肌和腹直肌前鞘分布于腹部前壁, 支配相应的皮肤, 肌肉和腹膜^[21, 22]。

5 结束语

TAPB可以阻断腹横肌平面中走行的感觉神经, 从而达到消除腹壁疼痛的作用, 但其阻塞范围有争议。Tran等人^[23]认为局部麻醉剂的扩散范围不能高于T10, 这表明TAPB对上腹部的镇痛作用较差。Murouchi等人^[24]认为超声引导的腹直肌鞘神经阻滞可以阻断T7~L1神经, 并且对中腹部和上腹部也有镇痛作用。Bhatia n.等人^[25]研究发现, 在肋缘下腹横肌平面阻滞可有效缓解上腹部切口手术的术后疼痛。Bashandy等人^[26]研究了

RSB在中线腹部手术中的应用, 表明它可以更有效地减少疼痛评分和阿片类药物的消耗。综上所述, 肋缘下腹横肌平面神经阻滞联合腹直肌鞘阻滞在腹部手术可以达到较好的镇痛效果

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