

. 实验研究 .

经鼻内镜手术中游离带蒂鼻中隔黏膜瓣的解剖研究

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【摘要】目的 探讨经鼻内镜手术中应用游离带蒂鼻中隔黏膜瓣修复颅底缺损的可行性以及黏膜瓣的覆盖范围。方法 应用 5 个尸体头颅标本(共 10 侧鼻腔),通过 Draf III 入路暴露颅前窝底,从鼻腔外侧壁显露蝶腭动脉出蝶腭孔的部位,采用传统方法获得黏膜瓣,暴露颅颈交界区。标记黏膜瓣覆盖颅前窝底和颅颈交界区的范围,然后切除腭骨蝶突和眶突,游离黏膜瓣蒂部,再标记将游离蒂部的鼻中隔黏膜瓣覆盖颅前窝底和颅颈交界区的范围。结果 术中均成功制作游离带蒂鼻中隔黏膜瓣。左右侧颅前窝底区域的覆盖长度分别增加了(1.10±0.16)cm、(1.12±0.16)cm,左右侧颅颈交界区的覆盖长度分别增加了(1.12±0.08)cm、(1.16±0.18)cm。结论 经鼻内镜手术中制作游离带蒂鼻中隔黏膜瓣是可行的,扩大游离蒂部的带蒂鼻中隔黏膜瓣能增加覆盖范围。

【关键词】经鼻内镜手术;带蒂鼻中隔黏膜瓣;颅底重建

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Anatomical study of dissociative pedicled nasoseptal flap during endoscopic endonasal surgery

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【Abstract】 Objective To investigate the feasibility of dissociative pedicled nasoseptal flap for repairing the skull base defect during endoscopic endonasal surgery and the coverage of the flap. Methods Five skull specimens (10 sides of nasal cavity) were used to expose the anterior skull base through Draf III approach, and the sphenopalatine artery exiting the sphenopalatine foramina was exposed from the lateral wall of the nasal cavity. The pedicled nasoseptal flap was harvested by the conventional method, and the craniocervical junction was exposed. The coverage extent of the nasoseptal flap over the anterior skull base and craniocervical junction were marked with a line. Finally, the sphenoid process and orbital process of the palatine were removed and the dissociation of pedicle was completed. The areas of the dissociative pedicled nasoseptal flap covering the anterior skull base and craniocervical junction were marked again compared with the previous ones. Results Dissociative pedicled nasoseptal flaps were successfully harvested during the operation. After dissociation, the length of covering anterior skull base area increased by (1.10±0.16) cm and (1.12±0.16) cm on the left and right sides, respectively; the length of covering craniocervical junction area increased by (1.12±0.08) cm and (1.16±0.18) cm on the right and left sides, respectively. Conclusions It is feasible to dissociate the pedicle of nasoseptal flap during endoscopic endonasal surgery. The dissociative pedicled nasoseptal flap can increase the extent of covering skull base defect.

【Key words】Pedicled nasoseptal flap; Endoscopic endonasal approach; Skull base reconstruction

带蒂鼻中隔黏膜瓣是经鼻内镜手术最常用的颅底缺损自体修补材料^[1,2]。近年来,随着颅底手术的增多,越来越多的颅底缺损需要修补,各种各样的带蒂黏膜瓣或者联合瓣被应用于临床,但也带来了更多的创伤^[3-18]。鼻中隔黏膜瓣的供血动脉自蝶腭孔

穿出,而蝶腭孔由蝶腭突、腭骨眶突和蝶骨前壁形成,去除翼腭孔周边骨质可能会增加带蒂鼻中隔黏膜瓣的自由度,但目前仍缺乏定量研究。本文探讨经鼻内镜术中颅底缺损应用游离黏膜瓣蒂部是否可行以及能否增加瓣的覆盖范围。

1 材料与方法

1.1 材料 选择 5 个尸体头颅样本,一共 10 侧鼻腔进行解剖研究。

1.2 解剖步骤 充分冲洗鼻腔后,从鼻腔的一侧进入,向外折断下鼻甲,向内侧移动中鼻甲。在中鼻甲根部外侧 1 cm 处鼻腔外侧壁做一个弓形切口,然后粘膜下分离继续向前,暴露蝶腭孔和蝶腭动脉。按

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照 Hadad 等^[1]报道的方法切除中鼻甲,制作鼻中隔黏膜瓣。采用下切口作为第一切口,上切口作为第二切口。最后在鼻中隔皮肤黏膜交界处连接两个切口,分离黏膜瓣,在骨膜层下抬起。打开上颌窦外侧壁,将黏膜瓣储存于上颌窦内。然后以 Draft III 入路打开额窦,露出整个颅前窝底。打开蝶窦,去除蝶窦前壁和下壁,去除斜坡骨质,露出头长肌起始点,暴露颅颈交界区。在颅前窝底和颅颈交界区铺设并标记鼻中隔瓣。然后,鼻中隔瓣放置在蝶窦里,扩大蝶腭孔,切除腭骨的蝶突和眶突,完全游离鼻中隔瓣的血管蒂-蝶腭动脉。游离鼻中隔蒂部后,标记前颅底和颅颈交界区鼻中隔黏膜瓣覆盖区域,重复上述测量。一侧测量完成后清洗标记,再切开另一边。测量并记录两标记线的距离。见图 1。

2 结果

扩大游离带蒂鼻中隔瓣的方法是可行的,切除腭骨蝶突和眶突,扩大蝶腭孔,增加鼻中隔自由度。

颅前窝底覆盖长度:左侧 0.9~1.3 cm,平均(1.10±0.16)cm;右侧 0.9~1.3 cm,平均(1.12±0.16)cm。

颅颈交界区覆盖长度:左侧 1.1~1.2 cm,平均(1.12±0.08)cm;右侧 0.9~1.3 cm,平均(1.16±0.18)cm。

3 讨论

以鼻中隔黏膜瓣为代表的各种带蒂黏膜瓣在经鼻蝶入路神经内镜手术的颅底重建中发挥着重要的作用,有效地减少了术后脑脊液漏。黏膜瓣可分为游离瓣和带蒂瓣,其中游离瓣缺乏血供和生长能力;

带蒂瓣是颅底重建的重要组成部分。带蒂瓣可分为局部瓣(鼻中隔瓣、鼻腔外侧壁瓣、各种鼻甲瓣)、区域瓣(额骨膜瓣、颞顶筋膜瓣、颊脂垫瓣)和远端瓣(大网膜瓣等)^[19]。

近年来,经鼻内镜手术的适应证越来越广,对颅底修复的要求也越来越高。各种改良鼻黏膜瓣是应用最广泛的自体修复材料,包括不同类型的改良鼻中隔黏膜瓣、多个相邻区联合黏膜瓣等。然而,如何选择合适的改良黏膜瓣,仍缺乏一致意见。此外,当鼻中隔黏膜瓣的蒂可能受到影响时,是否可以制作鼻中隔黏膜瓣也不明确。我们的研究表明,提前游离带蒂鼻中隔黏膜瓣可以更好地保护黏膜瓣的血供,扩大相应的适应证;同时增加覆盖颅前窝底及颅颈交界区的面积。本方法的价值是损伤相对较少,适合以下情况:颅前窝底病变切除后缺损累及额窦后壁;颅颈交界处病变,切除后缺损超过舌水平。如果累及颅中窝底,游离鼻中隔黏膜瓣面积不够大,无法覆盖缺损,则需要采用其他联合瓣。

在鼻中隔重建过程中,最重要的是确保黏膜瓣的生存能力。影响鼻中隔黏膜瓣血供的原因包括:取黏膜瓣时,动脉被直接切断或撕裂;黏膜瓣转位入同侧上颌窦时,出现短暂缺血或静脉充血;鼻中隔黏膜瓣放置时,动脉过度伸展;鼻中隔黏膜瓣在填充支撑材料时受压过大。Zhang 等^[20]根据鼻中隔后动脉解剖分析带血管蒂鼻中隔黏膜瓣的手术意义,确定了蝶窦开口下侧及后鼻中隔与后鼻孔交界处两个高危区域。因此,我们从鼻腔外侧壁预暴露鼻中隔黏膜瓣蒂,有助于安全保存供血动脉。Pinheiro-Neto 等^[21]报道如何在经鼻翼入路获取同侧鼻中隔黏膜瓣,先扩大翼腭窝,然后解剖出蒂部以保持鼻中隔瓣

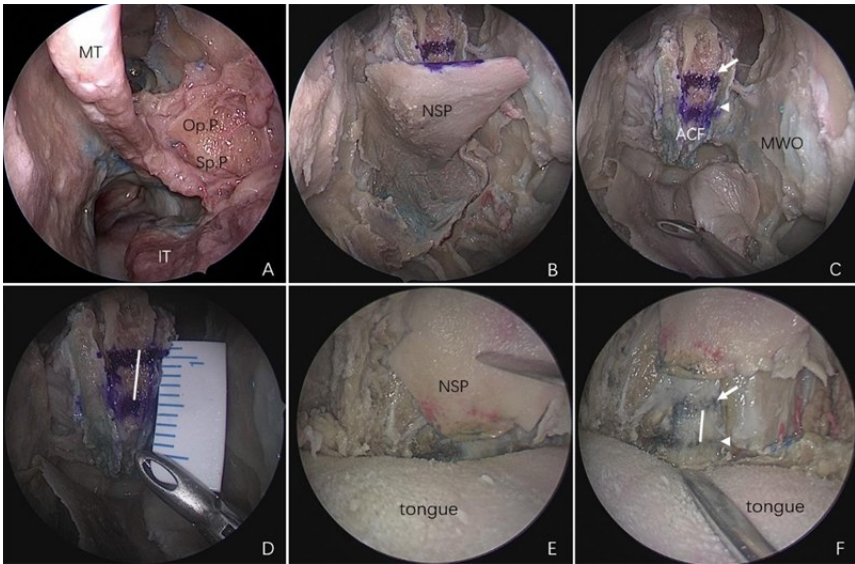


图 1 带蒂鼻中隔黏膜瓣游离前后的解剖步骤及距离测量
A. 显露鼻中隔瓣; B~D. 测量颅前窝游离前后距离; E、F. 测量颅颈交界区游离前后距离; MT. 中鼻甲; IT. 下鼻甲; Op.P. 腭骨眶突; Sp.P. 腭骨蝶突; NSP. 鼻中隔黏膜瓣; ACF. 颅前窝; MWO. 眶内侧壁; ▲ 标记常规黏膜瓣; ↑ 标记游离瓣; 白线为两条标记线之间的距离

的血供。我们在暴露蝶腭孔之前以微创的方式直接从中鼻甲外侧进行黏膜下分离,游离蒂部,使鼻中隔黏膜瓣在保留血供的同时获得了更大的自由度。游离鼻中隔瓣有利于需要切除额窦后壁的颅前窝底病变的颅底重建;位于颅颈交界处的病灶,游离鼻中隔黏膜瓣可增加覆盖舌平面以下的缺损。

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