

· 论著 ·

神经内镜与显微镜下经鼻蝶入路手术切除无功能性垂体腺瘤疗效和安全性的Meta分析

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【摘要】目的 系统评价神经内镜与显微镜下经鼻蝶入路手术切除无功能性垂体腺瘤的疗效和安全性。方法 计算机检索PubMed、Embase、Cochrane Center、中国生物医学文献数据库、维普中文科技期刊全文数据库、万方数据库、中国知网等中英文数据库有关神经内镜、显微镜下经鼻蝶入路无功能性垂体腺瘤切除术的文献,时限为2018年7月之前。指标包括肿瘤切除率、脑脊液渗漏发生率和视力恢复率。结果 共纳入19篇文献,2 383例。Meta分析结果:神经内镜手术全切除率比显微镜手术要高(75% vs 62%, $P<0.001$),神经内镜组视力恢复率也高于显微镜组(82% vs 59%, $P<0.001$)。两组脑脊液漏发生率无统计学差异(4% vs 6%, $P=0.078$)。结论 与显微镜下手术相比,神经内镜手术切除无功能性垂体腺瘤的疗效更好。

【关键词】无功能性垂体腺瘤;显微镜;神经内镜;经鼻蝶入路;疗效;Meta分析

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Curative effects of endoscopic and microscopic transsphenoidal surgeries on non-functioning pituitary adenomas and their safety: a Meta analysis

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【Abstract】 Objective To evaluate the curative effects of endoscopic and microscopic transsphenoidal surgeries on non-functional pituitary adenomas (NFPA)and their safety. Methods The data bases including PubMed, Embase, Cochrane center, WanFang, VIP and CNKI were searched for the studies of curative effects of microscopic and endoscopic transsphenoidal surgeries on non-functioning pituitary adenomas and their safety published before July, 2018. Meta-analysis of their curative effects and safety was performed. Results Of 19 eligible studies involving 2383 patients derived from the above-mentioned data bases, 5 were double arm studies including 1 randomized controlled trial and 4 retrospective studies and 14 were single arm studies. The rates of gross tumor resection and postoperative visual improvement were significantly higher in the endoscopic group than those in microscopic group ($P<0.001$). There was insignificant difference in the rate of occurrence of cerebrospinal fluid leakage between both the groups ($P=0.078$). Conclusions The clinical effect of the endoscopic transsphenoidal surgery on NFPA is significantly better than that of the microscopic transsphenoidal surgery, but they are similar in the rate of occurrence of postoperative cerebrospinal leakage.

【Key words】 Non-functioning pituitary adenomas; Endoscopy; Microscopy; Transsphenoidal surgery; Curative effects; Safety

垂体腺瘤占原发性颅内肿瘤的10%~25%^[1],而无功能性垂体腺瘤(non-functioning pituitary adenoma, NFPA)是其中最常见的一种。目前常用的手术方式是显微镜或神经内镜下经鼻蝶入路切除术。本文对显微镜或神经内镜下NFPA切除术进行综合性分析,以期为临床治疗提供参考。

1 资料和方法

1.1 文献检索

检索PubMed、Embase、Cochrane library、中国生物医学文献数据库、维普中文科技期刊

全文数据库、万方数据库和中国知网,检索日期截止至2018年7月。检索词:NFPA、内镜、显微镜;non-functioning pituitary adenomas, trans-sphenoidal and surgery, microscopic, endoscopic。

1.2 纳入和排除标准 纳入标准:**①**术前内分泌及影像学检查诊断为NFPA;**②**神经内镜(内镜组)或显微镜下(显微镜组)经鼻蝶入路手术;**③**临床研究;**④**结局指标包括肿瘤全切除率、脑脊液漏发生率和视力改善率。排除标准:**①**病例讨论;**②**无法获取全文及数据不完整;**③**动物实验;**④**重复发表的文章。

1.3 数据提取 由两名研究者对符合纳入标准的文献进行数据提取。内容包括:**①**一般资料,包括第一作者、发表时间和地区;**②**基本资料,包括样本量、性别、年龄;**③**治疗方案;**④**随访时间。

1.4 统计学分析 采用Stata 12.0、SPSS 19.0软件进行分析;采用 χ^2 检验和 I^2 检验进行异质性分析,若 $P \geq 0.1$ 且 $I^2 < 50\%$ 为研究具有同质性,采用固定效应模型进行分析;否则采用随机效应模型进行分析; $P < 0.05$ 为差异有统计学意义。

2 结 果

2.1 检索结果 共检索1 383篇文献,经阅读文题和摘要后,初步入选30篇,经全文阅读后,最终确定19篇^[2~20],其中英文13篇,中文6篇。总病例数2 383例。5篇对两种手术方式进行比较^[3~7],其中1篇为随机对照试验^[4],4篇为回顾性研究^[3, 5~7];其余14篇属于单臂研究^[2, 8~20]。纳入研究的基本特征见表1。

2.2 Meta分析结果

2.2.1 NFPA全切率 内镜组14篇^[2~12, 16, 19, 20]、显微镜组7篇^[3~8, 14]报道术后NFPA全切率。异质性分析显示:

内镜组($I^2=92.5, P<0.001$)和显微镜组($I^2=93.8\%, P<0.001$)均有明显异质性,故选择随机效应模型进行分析,结果表明,与显微镜组相比,内镜组NFPA全切率较高(75% vs. 62%, $P<0.001$;图1)。

2.2.2 脑脊液漏发生率 内镜组8篇^[2, 4, 5, 7, 10~20]、显微镜组5篇^[4~8]报道术后脑脊液漏。异质性分析显示:内镜组($I^2=67.1\%, P=0.003$)有异质性,显微镜组($I^2=25.3\%, P=0.253$)无异质性,故内镜组选择随机效应模型,显微镜组选择固定效应模型;结果表明,内镜组术后脑脊液漏与显微镜组无统计学差异(4% vs. 6%, $P=0.077$;图2)。

2.2.3 视力改善率 内镜组12篇^[2, 5, 7, 9, 10, 14~20]、显微镜组4篇^[5, 7, 8, 13]报道术后视力改善情况。异质性分析显示:内镜组($I^2=93.4\%, P<0.001$)和显微镜组($I^2=98.9\%, P<0.001$)均有明显异质性,故选择随机效应模型,结果表明内镜组术后视力改善率更高(82%

表1 纳入研究的基础特征

vs. 59%, $P<0.001$; 图3)。

3 讨 论

本文结果显示,神经内镜手术治疗NFPA的全切除率高于显微镜下手术。NFPA预后不良和术后复发的一个主要影响因素是肿瘤向蝶鞍旁延伸,特别是进入海绵窦。神经内镜提供了一条更宽、更优的途径进入蝶鞍区域和鞍上室,可以提高肿瘤全切除率,保护正常垂体组织,从而减少术后并发症^[21]。

虽然,神经内镜术后脑脊液漏发生率比显微镜

下手术有所降低,但是这种差异没有统计学意义。此外,本文对NFPA切除术后视力改善情况也进行了比较,结果发现神经内镜下手术后视力改善情况明显优于显微镜下手术。垂体腺瘤术后视力减退可能的原因是:填塞物过多压迫视神经、残瘤卒中、急性颅内压增高、视神经血管痉挛等^[2]。神经内镜手术能彻底地清理鞍底部,较多地保留功能结构。神经内镜下手术切除NFPA创伤小,肿瘤切除彻底,术后能更快改善视力。

本文不足在于:①研究多是回顾性研究,尚缺乏

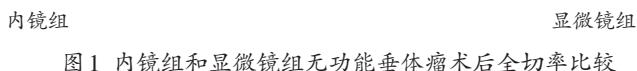


图1 内镜组和显微镜组无功能垂体瘤术后全切率比较

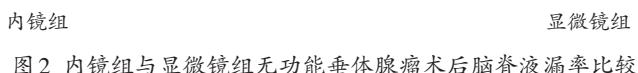


图2 内镜组与显微镜组无功能垂体腺瘤术后脑脊液漏率比较

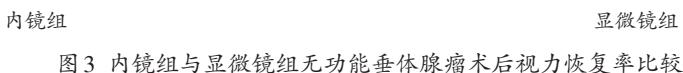


图3 内镜组与显微镜组无功能垂体腺瘤术后视力恢复率比较

高质量的前瞻性随机对照性研究;②纳入的显微镜组样本量偏少;③纳入的研究没有足够长时间的随访来充分确定两种手术方法的疗效和安全性。因此需进一步更大样本、多中心的高质量随机对照试验,以确认两种方法治疗NFPA的疗效和安全性。

【参考文献】

- [1] Ezzat S, Asa SL, Couldwell WT, et al. The prevalence of pituitary adenomas: a systematic review [J]. *Cancer*, 2004, 101(3): 613–619.
- [2] Chen L, White WL, Spetzler RF, et al. A prospective study of nonfunctioning pituitary adenomas: presentation, management, and clinical outcome [J]. *J Neurooncol*, 2011, 102(1): 129–138.
- [3] 吴世强,张卓,周明辉,等.神经导航及内镜辅助下经鼻蝶显微切除无功能性垂体大腺瘤的近期疗效分析[J].中国耳鼻咽喉颅底外科杂志,2016,22(4):284–287,292.
- [4] 韩易,姜之全,郑夏林,等.经鼻蝶入路切除垂体腺瘤两种手术方式的疗效分析[J].中华医学杂志,2017,97(19):1479–1483.
- [5] Messerer M, De Battista JC, Raverot G, et al. Evidence of improved surgical outcome following endoscopy for nonfunctioning pituitary adenoma removal [J]. *Neurosurg Focus*, 2011, 30(4): E11.
- [6] Dallapiazza R, Bond AE, Grober Y, et al. Retrospective analysis of a concurrent series of microscopic versus endoscopic transsphenoidal surgeries for Knosp Grades 0–2 nonfunctioning pituitary macroadenomas at a single institution [J]. *J Neurosurg*, 2014, 121(3): 511–517.
- [7] Karppinen A, Kivipelto L, Vehkavaara S, et al. Transition from microscopic to endoscopic transsphenoidal surgery for nonfunctional pituitary adenomas [J]. *World Neurosurg*, 2015, 84(1): 48–57.
- [8] 惠国桢,王清,吴智远,等.老年无功能性垂体腺瘤的外科治疗[J].中华神经外科杂志,2003,19(1):34–36.
- [9] 朱瑞,丛雪枫,卞威,等.神经内镜下经鼻-蝶窦入路无功能垂体腺瘤手术治疗[J].中华神经外科疾病研究杂志,2013,12(1):62–64.
- [10] 王清,鲁晓杰,汪璟,等.神经内镜经鼻蝶窦治疗老年无功能性垂体腺瘤[J].中华神经外科杂志,2016,32(8):785–788.
- [11] 贾亮,张庆九,吕中强,等.神经内镜下无功能垂体腺瘤切除术后疗效分析[J].中国微侵袭神经外科杂志,2016,21(5):212–213.
- [12] Alameda C, Lucas T, Pineda E, et al. Experience in management of 51 non-functioning pituitary adenomas: indications for post-operative radiotherapy[J]. *J Endocrinol Invest*, 2005, 28(1): 18–22.
- [13] Berkmann S, Schlaffer S, Nimsky C, et al. Follow-up and long-term outcome of nonfunctioning pituitary adenoma operated by transsphenoidal surgery with intraoperative high-field magnetic resonance imaging [J]. *Acta Neurochir (Wien)*, 2014, 156(12): 2233–2243.
- [14] Brochier S, Galland F, Kujas M, et al. Factors predicting relapse of nonfunctioning pituitary macroadenomas after neurosurgery: a study of 142 patients [J]. *Eur J Endocrinol*, 2010, 163(2): 193–200.
- [15] Dekkers OM, Pereira AM, Roelfsema F, et al. Observation alone after transsphenoidal surgery for nonfunctioning pituitary macroadenoma [J]. *J Clin Endocrinol Metab*, 2006, 91(5): 1796–1801.
- [16] Magro E, Graillon T, Lassave J, et al. Complications related to the endoscopic endonasal transsphenoidal approach for nonfunctioning pituitary macroadenomas in 300 consecutive patients [J]. *World Neurosurg*, 2016, 89: 442–453.
- [17] Robenshtok E, Benbassat CA, Hirsch D, et al. Clinical course and outcome of nonfunctioning pituitary adenomas in the elderly compared with younger age groups [J]. *Endocr Pract*, 2014, 20(2): 159–164.
- [18] Tanemura E, Nagatani T, Aimi Y, et al. Quality of life in nonfunctioning pituitary macroadenoma patients before and after surgical treatment [J]. *Acta Neurochir (Wien)*, 2012, 154(10): 1895–1902.
- [19] Yildirim AE, Sahinoglu M, Ekici I, et al. Nonfunctioning pituitary adenomas are really clinically nonfunctioning: clinical and endocrinological symptoms and outcomes with endoscopic endonasal treatment [J]. *World Neurosurg*, 2016, 85: 185–192.
- [20] Zhan R, Ma Z, Wang D, et al. Pure endoscopic endonasal transsphenoidal approach for nonfunctioning pituitary adenomas in the elderly: surgical outcomes and complications in 158 patients [J]. *World Neurosurg*, 2015, 84: 1572–1578.
- [21] Li A, Liu W, Cao P, et al. Endoscopic versus microscopic transsphenoidal surgery in the treatment of pituitary adenoma: a systematic review and meta-analysis [J]. *World Neurosurg*, 2017, 101: 236–246.