

2018 法国耳鼻咽喉头颈外科学会指南解读： 不同治疗方案在儿童 OSAHS 治疗中的地位

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[关键词] 睡眠呼吸暂停,阻塞性;儿童;腺样体扁桃体切除术;指南解读

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Interpretation of French Society of ENT guidelines on the roles of the various treatment options in childhood obstructive sleep apnea-hypopnea syndrome

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Summary The French Society of ENT and Head Neck Surgery(SFORL)present the guidelines on the roles of the various treatment options in childhood obstructive sleep apnea in May 2018,this paper is the interpretation of the guidelines.

Key words sleep apnea,obstructive;child;adenotonsillectomy;guideline interpretation

我国目前有关儿童 OSAHS 诊治的指南是中华耳鼻咽喉头颈外科杂志编委会 2007 年颁布的《儿童阻塞性睡眠呼吸暂停低通气综合征诊疗指南草案》^[1],至今已经十余年,近年来有关儿童 OSAHS 治疗的研究取得了显著的成果,尤其是在扁桃体部分切除术和正压通气治疗方面。2018 年 5 月法国耳鼻咽喉头颈外科学会颁布新指南,介绍了不同治疗方案在 OSAHS 治疗中的地位^[2],本文对该指南的重点内容进行解读。

儿童 OSAHS 的患病率为 1%~2%^[3],医生主要根据病史和体格检查进行诊断。睡眠监测是客观的检查,可以准确判断病情的严重程度。儿童 OSAHS 与成人 OSAHS 有明显区别,儿童阻塞性睡眠呼吸暂停指数 >1 或呼吸暂停低通气指数(apnea-hypopnea index,AHI) >1.5 认为异常,AHI >5 与嗜睡、学习能力下降、频繁打鼾密切相关^[4],AHI >10 被认为是重度 OSAHS。无论病情轻重,OSAHS 患儿治疗的目标是解除气道阻塞,耳鼻咽喉科医生不仅要重视外科手术,同时要兼顾内科治疗方案的选择。

1 外科手术

1.1 腺样体扁桃体切除术

腺样体扁桃体肥大是儿童 OSAHS 最主要的原因,伴有腺样体扁桃体肥大的 OSAHS 儿童,包括肥胖儿童、OSAHS 代谢综合征和有神经认知功

能缺陷患儿,腺样体扁桃体切除术是首选的治疗方案,研究证明术后睡眠参数都会明显改善^[5-7]。腺样体扁桃体手术的方法很多,临床医生可根据情况选择合适的方法进行腺样体扁桃体切除。最近越来越多的研究支持扁桃体部分切除术,指南推荐对于单纯扁桃体肥大引起潜在 OSAHS 的患儿,推荐行囊内部分切除。扁桃体部分切除可减轻术后疼痛,降低术后继发性出血的风险,患儿更容易接受,并且可以达到类似的治疗效果^[8-11]。

1.2 鼻部手术

鼻中隔手术不是治疗儿童 OSAHS 的主要手段,临床也较少使用,该指南指出伴有严重鼻中隔偏曲的 OSAHS 患儿也可以进行鼻中隔手术,并且不受年龄限制,但考虑到儿童鼻腔结构尚未完全发育,术中应尽可能多保留软骨。然而截止到目前相关的研究并不多,只有 2 项研究报道了 OSAHS 患儿接受鼻中隔手术后的效果^[12-15],对 OSAHS 患儿进行鼻中隔手术尚存在争议。该指南还指出了下鼻甲成形术适用于伴有鼻甲肥大引起鼻塞症状的患儿或面中线畸形导致睡眠阻塞的患儿,不受年龄限制。指南建议对于有鼻塞症状又难以配合用药,尤其是新生儿或婴幼儿发育畸形的患儿可考虑下鼻甲成形术^[11-20]。由于儿童尚处于生长发育期,所以在临床上应该严格把握手术指征。

1.3 舌扁桃体减容术

该指南推荐伴有舌扁桃体肥大的 OSAHS 患儿可以进行舌扁桃体减容术。舌扁桃体肥大在肥

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胖儿童和(或)唐氏综合征儿童较为常见,内镜检查可以诊断^[21]。相关研究显示舌扁桃体减容可以降低 AHI,但不能将 AHI 降至正常^[22],而且远期效果还需要进一步证实。巨舌症可以导致 OSAHS,研究报道了冷刀法、等离子消融及射频刀等多种治疗手段。目前仅有一项研究证实舌根部手术后患儿睡眠参数得到改善^[23],关于舌减容目前尚缺乏指南相关的数据支持。儿童阻塞性舌后坠通常是皮罗综合征的症状之一,除了调整体位和持续正压通气治疗,也可以采用唇舌固定术和下颌骨牵引成骨,2种手段对于解除相关的阻塞都有明显的效果,成功率约为 80%^[24-25]。

1.4 喉气管手术

喉部疾病也可以引起 OSAHS。指南推荐声门上成形术可用于喉软骨软化引起 OSAHS 的婴儿和儿童。喉软骨软化病变仅仅发生在喉部,手术切除杓会厌皱襞、黏膜切除或声门上成形术有助于改善 OSAHS 症状^[26]。OSAHS 患儿最终的治疗手段是气管切开。气管切开用于解除潜在的呼吸障碍,对于 OSAHS,仅限于复杂情况导致严重症状的患儿、发育畸形的患儿、持续气道正压通气(continuous positive airway pressure, CPAP)难以实施或无效的患儿。与成人比较,儿童气管切开并发症和死亡率相对较高,尤其是早产儿和低体重儿童^[27]。

2 保守治疗

2.1 CPAP 治疗

CPAP 治疗 OSAHS 的有效性已经证实,在重度 OSAHS 患儿等待手术或准备手术的时候非常有用。指南推荐对于有手术禁忌证或手术无效的患儿,可以选择 CPAP 治疗。CPAP 在整个呼吸周期都提供持续正压,目前最常用于上气道阻塞。用于 OSAHS 患儿的指征包括:不伴有腺样体扁桃体肥大的重度 OSAHS 患儿,腺样体扁桃体手术后睡眠呼吸阻塞未解除的患儿^[28-29];咽喉部复杂部位阻塞或喉部病变,如阻塞相关的肺泡低通气、病理性肥胖、支气管肺发育不良^[30-31];气管切开的替代方案;有手术禁忌证的患儿。

2.2 口腔正畸治疗

指南推荐儿童正畸评估用于不伴有腺样体扁桃体肥大的 OSAHS 儿童,或手术后仍持续阻塞的患儿。上颌骨快速扩张可以用于关节紊乱引起的 OSAHS。牙科关节紊乱导致的睡眠障碍采用下颌前移矫形器可能有效。肌筋膜修复作为正畸治疗的补充有助于维持远期的效果^[32-35]。

2.3 药物治疗

指南推荐鼻喷激素可用于儿童 OSAHS 相关的鼻阻塞。鼻喷激素可用于轻、中度 OSAHS,伴或不伴有腺样体扁桃体肥大或腺样体扁桃体术后

持续的 OSAHS,鼻喷激素使用可以改善或消除 OSAHS,也可用于鼻炎导致的阻塞^[36-39]。孟鲁司特除重度 OSAHS 外,也可用于哮喘儿童,并且常与鼻喷激素联合使用,3 个月后再评估症状。有两项随机研究证实使用鼻喷白三烯受体拮抗剂孟鲁司特(6~12 周)可改善睡眠质量,减轻 AHI,但没有比较孟鲁司特与腺样体扁桃体切除术或评估远期效果^[40-41]。

对于不同病因导致的 OSAHS 患儿,应根据情况采取个性化的治疗方案。通过该指南的解读我们了解到法国耳鼻咽喉头颈外科对儿童 OSAHS 治疗方案的选择基本与国际上及我国的指南相似。该指南着重强调了扁桃体部分切除的应用价值,提出扁桃体部分切除可减轻术后疼痛,降低术后继发性出血的风险,患儿更容易接受,并且可以达到类似的治疗效果。对于内科保守治疗也是我国现在采用的鼻喷激素和孟鲁司特的联合治疗。该指南也存在一些局限性,比如没有提及腺样体扁桃体切除术的年龄限制,也没有列出合并变应性鼻炎的 OSAHS 患儿的治疗方案,这些问题需要在修订我国相关指南时进一步完善。

参考文献

- [1] 中华耳鼻咽喉头颈外科杂志编委会. 儿童阻塞性睡眠呼吸暂停低通气综合征诊疗指南草案(乌鲁木齐)[J]. 中华耳鼻咽喉头颈外科杂志, 2007, 42(2): 83-84.
- [2] Pateron B, Marianowski R, Monteyrol PJ, et al. French Society of ENT (SFORL) guidelines (short version) on the roles of the various treatment options in childhood obstructive sleep apnea-hypopnea syndrome[J]. Eur Ann Otorhinolaryngol Head Neck Dis, 2018, 135(4): 265-268.
- [3] Cohen-Gogo S, Do NT, Levy D, et al. [Sleep-disordered breathing in children][J]. Arch Pediatr, 2009, 16(2): 123-131.
- [4] Goodwin JL, Kaemingk KL, Fregosi RF, et al. Clinical outcomes associated with sleep-disordered breathing in Caucasian and Hispanic children--the Tucson Children's Assessment of Sleep Apnea study (TuCASA)[J]. Sleep, 2003, 26(5): 587-591.
- [5] Marcus CL, Moore RH, Rosen CL, et al. A randomized trial of adenotonsillectomy for childhood sleep apnea[J]. N Engl J Med, 2013, 368(25): 2366-2367.
- [6] Koren D, Gozal D, Bhattacharjee R, et al. Impact of adenotonsillectomy on insulin resistance and lipoprotein profile in nonobese and obese children[J]. Chest, 2016, 149(4): 999-1010.
- [7] Taylor HG, Bowen SR, Beebe DW, et al. Cognitive effects of adenotonsillectomy for obstructive sleep apnea[J]. Pediatrics, 2016, 138(2): 204-217.
- [8] Hanss J, Nowak C, Decaux A, et al. Outpatient tonsillectomy in children: a 7-year experience[J]. Eur Ann

- Otorhinolaryngol Head Neck Dis, 2011, 128(6): 283—289.
- [9] Söderman AC, Odhagen E, Ericsson E, et al. Post-tonsillectomy haemorrhage rates are related to technique for dissection and for haemostasis. An analysis of 15,734 patients in the National Tonsil Surgery Register in Sweden[J]. Clin Otolaryngol, 2015, 40(3): 248—254.
- [10] Østvoll E, Sunnergren O, Ericsson E, et al. Mortality after tonsil surgery, a population study, covering eight years and 82,527 operations in Sweden[J]. Eur Arch Otorhinolaryngol, 2015, 272(3): 737—343.
- [11] Hultcrantz E, Ericsson E, Hemlin C, et al. Paradigm shift in Sweden from tonsillectomy to tonsillotomy for children with upper airway obstructive symptoms due to tonsillar hypertrophy[J]. Eur Arch Otorhinolaryngol, 2013, 270(9): 2531—2536.
- [12] Martins MB, Lima RG, Lima FV, et al. Demystifying septoplasty in children[J]. Int Arch Otorhinolaryngol, 2014, 18(1): 54—56.
- [13] Yilmaz MS, Guven M, Akidil O, et al. Does septoplasty improve the quality of life in children? [J]. Int J Pediatr Otorhinolaryngol, 2014, 78(8): 1274—1276.
- [14] Cohen SR, Lefaivre JF, Burstein FD, et al. Surgical treatment of obstructive sleep apnea in neurologically compromised patients[J]. Plast Reconstr Surg, 1997, 99(3): 638—646.
- [15] Josephson GD, Levine J, Cutting CB. Septoplasty for obstructive sleep apnea in infants after cleft lip repair [J]. Cleft Palate Craniofac J, 1996, 33(6): 473—476.
- [16] Arganbright JM, Jensen EL, Mattingly J, et al. Utility of Inferior Turbinoplasty for the Treatment of Nasal Obstruction in Children: A 10-Year Review[J]. JAMA Otolaryngol Head Neck Surg, 2015, 141(10): 901—904.
- [17] Yuen SN, Leung PP, Funamura J, et al. Complications of turbinate reduction surgery in combination with tonsillectomy in pediatric patients[J]. Laryngoscope, 2017, 127(8): 1920—1923.
- [18] Langille M, El-Hakim H. Pediatric inferior turbino-plasty with or without adenoidectomy: preliminary report on improvement of quality of life, symptom control, and safety[J]. J Otolaryngol Head Neck Surg, 2011, 40(5): 420—426.
- [19] Twigg V, Carr S, Peres C, et al. Turbinoplasty surgery for nasal obstruction in craniometaphyseal dysplasia: A case report and review of the literature[J]. Int J Pediatr Otorhinolaryngol, 2015, 79(6): 935—937.
- [20] Tenconi R, Khirani S, Amaddeo A, et al. Sleep-disordered breathing and its management in children with achondroplasia[J]. Am J Med Genet A, 2017, 173(4): 868—878.
- [21] Arnaud E, Paternoster G, James S, et al. [Craniofacial strategy for syndromic craniosynostosis] [J]. Ann Chir Plast Esthet, 2016, 61(5): 408—419.
- [22] Kuo CY, Parikh SR. Can lingual tonsillectomy improve persistent pediatric obstructive sleep apnea? [J]. Laryngoscope, 2014, 124(10): 2211—2212.
- [23] Maturo SC, Mair EA. Submucosal minimally invasive lingual excision: an effective, novel surgery for pediatric tonguebase reduction[J]. Ann Otol Rhinol Laryngol, 2006, 115(8): 624—630.
- [24] Fayoux P, Hosana G, Bonne NX, et al. Tongue-lip adhesion[J]. Eur Ann Otorhinolaryngol Head Neck Dis, 2013, 130(2): 99—102.
- [25] Hong P, Kearns D. Airway characteristics of infants with Pierre Robin sequence who undergo mandibular distraction osteogenesis[J]. Ear Nose Throat J, 2015, 94(8): E25—29.
- [26] Mase CA, Chen ML, Horn DL, et al. Supraglottoplasty for sleep endoscopy diagnosed sleep dependent laryngomalacia [J]. Int J Pediatr Otorhinolaryngol, 2015, 79(4): 511—515.
- [27] Dal'Astra AP, Quirino AV, Caixeta JA, et al. Tracheostomy in childhood: review of the literature on complications and mortality over the last three decades [J]. J Otorhinolaryngol, 2017, 83(2): 207—214.
- [28] Leboulanger N, Fauroux B. Noninvasive positive pressure ventilation in children in otolaryngology[J]. Eur Ann Otorhinolaryngol Head Neck Dis, 2013, 130(2): 73—73.
- [29] Essouri S, Nicot F, Clément A, et al. Noninvasive positive pressure ventilation in infants with upper airway obstruction: comparison of continuous and bi-level positive pressure [J]. Intensive Care Med, 2005, 31(4): 574—580.
- [30] Amaddeo A, Abadie V, Chalouhi C, et al. Continuous Positive Airway Pressure for Upper Airway Obstruction in Infants with Pierre Robin Sequence[J]. Plast Reconstr Surg, 2016, 137(2): 609—612.
- [31] Fauroux B, Leboulanger N, Roger G, et al. Noninvasive positive pressure ventilation avoids recannulation and facilitates early weaning from tracheotomy in children[J]. Pediatr Crit Care Med, 2010, 11(1): 31—37.
- [32] Pirelli P, Saponara M, Attanasio G. Obstructive Sleep Apnoea Syndrome(OSAS) and rhino-tubarial dysfunction in children: therapeutic effects of RME therapy [J]. Prog Orthod, 2005, 6(1): 48—61.
- [33] Machado-Júnior AJ, Zancanella E, Crespo AN. Rapid maxillary expansion and obstructive sleep apnea: A review and meta-analysis[J]. Med Oral Patol Oral Cir Bucal, 2016, 21(4): e465—469.
- [34] Villa MP, Bernkopf E, Pagani J, et al. Randomized controlled study of an oral jaw-positioning appliance for the treatment of obstructive sleep apnea in children with malocclusion[J]. Am J Respir Crit Care Med, 2002, 165(1): 123—127.

• 论著——临床研究 •

不同鼓室黏膜状态的湿耳施行鼓室成形术的疗效分析*

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【摘要】 目的:回顾性分析慢性化脓性中耳炎湿耳患者处于不同鼓室黏膜状态施行鼓室成形术的术后听力改善和穿孔愈合情况。方法:根据鼓室黏膜及残余鼓膜的病变特点,将80例慢性化脓性中耳炎湿耳患者分为积液组、肿胀组和肉芽组,比较各组患者的一般情况,包括性别、年龄、病程、术耳侧别、穿孔大小及位置、听骨链破坏程度及重建材料,并比较观察各组患者术后听力改善和鼓膜的愈合情况。结果:积液组、肿胀组和肉芽组湿耳患者在性别、年龄、病程、术耳侧别、穿孔大小和部位上均差异无统计学意义($P>0.05$)。湿耳患者总体术后平均气骨导差较术前有显著提高($P<0.01$),其中积液组患者平均气骨导差由术前(25.5 ± 10.8) dB下降至(15.4 ± 9.4) dB、肿胀组由术前(27.6 ± 8.7) dB下降至(15.2 ± 9.6) dB、肉芽组由术前(29.5 ± 7.7) dB下降至(17.2 ± 17.2) dB。湿耳患者整体鼓膜愈合率为90.0%,其中积液组为84.6%,肿胀组为93.3%,肉芽组为100.0%,3组患者术后鼓膜愈合率无显著性差异($P>0.05$)。结论:湿耳并非慢性化脓性中耳炎鼓室成形术的绝对禁忌证。鼓室黏膜无论是否存在积液、肿胀或肉芽增生,鼓室成形术后患者听力较术前均有显著改善,且鼓膜愈合率并未降低。规范湿耳手术时机、明确手术禁忌,阐明其鼓膜愈合的病理生理机制,仍需进一步的基础与临床研究。

【关键词】 中耳炎,化脓性;湿耳;鼓室成形术;鼓膜穿孔

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Effect of tympanoplasty on wet ear with different mucosal status of tympanic cavity

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Abstract Objective: A retrospective analysis of audiologic outcome and graft take rate on post-tympanoplasty with different middle ear mucosal conditions in wet ear. **Method:** According to the characteristics of middle ear

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- [35] Guillemainault C, Huang YS, Monteyrol PJ, et al. Critical role of myofascial reeducation in pediatric sleep-disordered breathing[J]. *Sleep Med*, 2013, 14(6): 518-525.
- [36] Brouillette RT, Manoukian JJ, Ducharme FM, et al. Efficacy of fluticasone nasal spray for pediatric obstructive sleep apnea[J]. *J Pediatr*, 2001, 138(6): 838-844.
- [37] Kheirandish L, Goldbart AD, Gozal D. Intranasal steroids and oral leukotriene modifier therapy in residual sleep-disordered breathing after tonsillectomy and adenoidectomy in children[J]. *Pediatrics*, 2006, 117(1): e61-66.
- [38] Kheirandish L, Gozal D. Intranasal budesonide treatment for children with mild obstructive sleep apnea syndrome[J]. *Pediatrics*, 2008, 122: 149-55.
- [39] Zicari AM, Occasi F, Montanari G, et al. Intranasal budesonide in children affected by persistent allergic rhinitis and its effect on nasal patency and Nasal Obstruction Symptom Evaluation(NOSE) score[J]. *Curr Med Res Opin*, 2015, 31(3): 391-396.
- [40] Goldbart AD, Greenberg-Dotan S, Tal A. Montelukast for children with obstructive sleep apnea: a double-blind, placebo-controlled study[J]. *Pediatrics*, 2012, 130(3): e575-580.
- [41] Kheirandish-Gozal L, Bandla HP, Gozal D. Montelukast for Children with Obstructive Sleep Apnea: Results of a Double-Blind, Randomized, Placebo-Controlled Trial[J]. *Ann Am Thorac Soc*, 2016, 13(10): 1736-1741.

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