

BiPAP治疗OSA、OHS重叠综合征 并夜间遗尿症1例

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摘要

阻塞性睡眠呼吸暂停与肥胖低通气综合征均是以缺氧为基础的呼吸系统疾病, 可出现睡眠憋气, 晨起头痛, 白天嗜睡, 记忆力下降, 夜尿频多、遗尿等症状。长期缺氧可导致高血压、冠心病、肺心病、卒中等心脑血管病变, 甚至夜间猝死。而遗尿作为其常见并发症之一, 却容易被忽视。本文分析了内分泌科及呼吸内科联合诊治1例的OSA、OHS重叠综合征并夜间遗尿症患者的病历资料, 并检索相关文献, 分析该患者的临床特点及治疗情况, 提高对该类型疾病的诊治水平。

关键词

BiPAP, 阻塞性睡眠呼吸暂停, 肥胖低通气, 遗尿症

BiPAP for OSA, OHS Overlap Syndrome and Nocturnal Enuresis: A Case Report

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Abstract

Obstructive sleep apnea and obesity hypopnea syndrome are respiratory diseases based on hypoxia, which can appear in sleep suffrage, morning headache, daytime sleepiness, memory loss, frequent urination at night, enuresis and other symptoms. Long-term hypoxia can lead to hyper-

tension, coronary heart disease, pulmonary heart disease, stroke and other cardio-cerebral pulmonary vascular diseases, and even sudden death at night. As one of its common complications, enuresis is easy to be ignored. This paper analyzed the medical records of a patient with OSA, OHS overlap syndrome and nocturnal enuresis who was treated jointly by the Department of Endocrinology and the Department of Respiratory Medicine, and searched relevant literature to analyze the clinical characteristics and treatment of the patient, so as to improve the diagnosis and treatment level of this type of disease.

Keywords

BiPAP, Obstructive Sleep Apnea, Obesity Hypopnea, Enuresis

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1. 临床资料

患者薛 XX, 男, 35 岁, 因“体重进行性增加 10 余年, 双下肢无力 1 天” 2023-07-07 入我院。患者 10 年前开始出现体重逐渐增加, 无暴饮、暴食, 无口干多饮, 无皮肤多发痤疮、脱屑, 无指、趾发育畸形, 无表情呆滞, 无反应迟钝, 患者未就诊治疗; 1 天前患者无明显诱因下出现双下肢无力, 无发热, 无恶心呕吐及腹泻, 无头晕头痛, 无肢体活动异常, 门诊为排查乏力、肥胖病因及治疗收住入院。既往夜间睡眠打鼾十余年, 近 2 年有夜间憋醒, 日间嗜睡; 夜间睡眠状态下有尿失禁, 当地多家医院诊治未明确病因; 既往无高血压、糖尿病、冠心病史。无吸烟史。

入院查体: T: 36.6°C, BP: 153/89 mmHg, 腹围 147 cm, 身高 184 cm, 体重 170 kg, BMI: 50.21 kg/m²。腹型肥胖明显, 巩膜无黄染, 口唇无发绀, 听诊双肺呼吸音粗, 心律齐, 第一心音无增强, 腹膨隆, 腹部皮肤可见紫纹, 全腹无压痛及反跳痛, 肝脾肋下未及, 双下肢无水肿。病理反射未引出。辅助检查: (2023-07-06 呼吸内科)睡眠监测报告: 重度阻塞型睡眠呼吸暂停综合征; 重度低氧血症(AHI: 59.4 次/小时, 最长呼吸暂停时间 90.9 s, 最低血氧饱和度 50.0%)。入院完善血常规血红蛋白 165 g/L; 血生化: 尿酸, 544.8 μmol/L, 胆固醇, 3.73 mmol/L, 甘油三酯, 1.9 mmol/L, 高密度脂蛋白, 0.61 mmol/L, 低密度脂蛋白, 2.26 mmol/L; 糖化血红蛋白, 6.3%; 甲状腺功能及相关抗体正常; 泌尿系彩超示: 前列腺稍大; 残余尿彩超: 膀胱无残余尿。胸部 CT 示: 双肺散在微小结节, Lung-RADS 2; 腹部(肾上腺 CT)示: 脂肪肝; 双侧肾上腺未见异常。血皮质醇(早 8 点-下午 4 点-夜 12 点), 366.0 - 117.8 - 104.5 nmol/L; 血促肾上腺皮质激素(早 8 点-下午 4 点-夜 12 点), 30.95 - 26.41 - 8.47 ng/L; 血气分析(未吸氧): 乳酸, 2.1 mmol/L, pH: 7.41, 氧分压(PO₂), 69 mmHg, 氧饱和度(SO₂), 94%, 二氧化碳总量, 30.6 mmol/L, 二氧化碳分压, 46 mmHg; 心超示: 左心大; 升主动脉增宽; 左室收缩功能正常, 舒张功能减低。头颅(鞍区) MRI 平扫及增强示: 动态增强后, 垂体内可见多发小结节状低信号改变, 大者直径约 2 mm, 边缘光滑, 考虑微腺瘤可能。垂体柄居中, 鞍隔未见明显抬高, 鞍上池未见明显异常信号影, 两侧海绵窦血管未见明显异常信号影。入院后诊断: 代谢综合征, 肥胖; 睡眠呼吸暂停低通气综合征, 肥胖低通气综合征, 高尿酸血症; 入院给予健康宣教, 低脂、低嘌呤饮食, 呼吸科指导 BiPAP 呼吸机治疗, 初始设定 IPAP 14 cm H₂O, EPAP 6 cm H₂O, 呼吸频率 16 次/分, 夜间监测指脉氧 88%~98%, 治疗当天夜间尿失禁症状消失, 次日嗜睡症状改善, 监测血压正常, 予办理出院。出院后 1 月随访患者, 夜间坚持佩戴无创呼吸机, 每晚治疗时间 6~7 小时, 未再出现夜间尿失禁情况。

2. 讨论

阻塞性睡眠呼吸暂停(obstructive sleep apnea, OSA)是一种临床常见的睡眠呼吸紊乱性疾病,以夜间打鼾、呼吸暂停、睡眠结构紊乱、白天嗜睡为临床表现[1]。在 Wisconsin 睡眠研究中发现,在 30 岁至 49 岁的人群中,10%的男性和 3%的女性患有 OSAHS,而在 50 岁至 70 岁的人群中,男性和女性 OSAHS 患病率上升至 17%和 9% [2]。肥胖低通气综合征(obesity hypoventilation syndrome, OHS)是在没有其他低通气病因的情况下,存在肥胖(BMI ≥ 30 kg/m²)和清醒时高碳酸血症(PaCO₂ ≥ 45 mmHg)。目前研究显示 OHS 患病率为 0.4%~0.6% [3]。OSA 与 OHS 是关系密切但又有明显差别的两种疾病,研究显示 88% OHS 患者存在 OSA,而 70%的 OHS 患者有严重 OSA [4]。OSA、OHS 重叠综合征患者既存在夜间间歇性缺氧、又存在长期二氧化碳潴留,更引起全身氧化应激、炎症反应及交感神经活性增强,可导致高血压、冠心病、脑血管病、认知障碍、糖尿病等多器官功能障碍[5]。

遗尿是 OSA 患者常见的并发症,其产生原因包括间断呼吸运动对膀胱的直接机械压力,以及某些激素的间接作用,如脑钠肽激素和肾素-血管紧张醛固酮复合物。OSA 患者反复出现的呼吸暂停,导致胸腔内负压频繁改变,心肌在胸腔负压作用下诱发脑钠肽激素的释放。这种激素增加了水分排泄,膀胱内尿潴留增加使膀胱功能不堪重负。另外由于 OSA 患者存在间歇性缺氧,可能导致肾素-血管紧张醛固酮系统激活[6] [7] [8]。除此之外,肥胖也是引起遗尿的一个危险因素,原因可能是通过增加腹内压力和膀胱压力而导致尿失尿和遗尿[9]。

持续气道正压通气(continuous positive airway pressure, CPAP)是单纯中、重度 OSA 的首选治疗方法[10] [11]。而对于 OSA、OHS 重叠综合征患者,美国胸科学会(ATS)专家组同样推荐 CPAP 作为初始治疗方法[12]。正压通气既可以在吸气时防止大气道阻塞和塌陷,又可以在呼气时提供一定的压力,防止呼气末肺泡萎陷,增加残气量,减少肺内分流,纠正低氧血症。除了 CPAP,双水平气道正压通气(bi-level positive airway pressure, BiPAP)治疗 OSA 疗效与 CPAP 相当[13] [14]。但对于 CPAP 耐受性差或治疗效果不理想的患者,更换为 BiPAP 治疗是普遍的选择[15] [16]。BiPAP 尤其适用于严重 OSA、OHS 重叠患者,既纠正了缺氧又有效降低二氧化碳潴留。故本例患者在初始治疗时选择了 BiPAP,治疗效果令人满意。

回顾本例患者的诊治过程,该患者体重增加后出现夜间打鼾,后出现遗尿,当地医院多家肾内科及泌尿外科诊治未明确病因,忽略了重度肥胖及 OSA 亦可以作为病因进行鉴别诊断。OSA 人群在医院的各个科室均能见到,需要提高临床各科室医务人员对 OSA 的筛查意识,对不明原因遗尿的患者应常规进行 OSA 筛查,有助于早期诊断和治疗。

参考文献

- [1] Rowley, J.A., Lareau, S., Fahy, B.F., et al. (2017) What Is Obstructive Sleep Apnea In Adults? *American Journal of Respiratory and Critical Care Medicine*, **196**, 1-2. <https://doi.org/10.1164/rccm.1961P1>
- [2] Peppard, P.E., Young, T., Barnet, J.H., Palta, M., Hagen, E.W. and Hla, K.M. (2013) Increased Prevalence of Sleep-Disordered Breathing in Adults. *American Journal of Epidemiology*, **177**, 1006-1014. <https://doi.org/10.1093/aje/kws342>
- [3] Masa, J.F., Pépin, J.L., Borel, J.C., et al. (2019) Obesity Hypoventilation Syndrome. *European Respiratory Society*, **28**, 180097. <https://doi.org/10.1183/16000617.0097-2018>
- [4] Mokhlesi, B. (2010) Obesity Hypoventilation Syndrome: A State-of-the-Art Review. *Respiratory Care*, **55**, 1347-1362.
- [5] Morsy, N.E., Farrag, N.S., Zaki, N.F.W., et al. (2019) Obstructive Sleep Apnea: Personal, Societal, Public Health, and Legal Implications. *Reviews on Environmental Health*, **34**, 153-169. <https://doi.org/10.1515/reveh-2018-0068>
- [6] Jeyakumar, A., Rahman, S.I., Armbrrecht, E.S. and Mitchell, R. (2012) The Association between Sleep-Disordered Breathing and Enuresis in Children. *Laryngoscope*, **122**, 1873-1877. <https://doi.org/10.1002/lary.23323>
- [7] Alexopoulos, E., Malakasioti, G., Varlami, V., Miligkos, M., Gourgoulanis, K. and Kaditis, A. (2014) Nocturnal Enure-

- sis as Risk Factor for Moderate-to-Severe OSA in Children with Snoring. *Pediatric Research*, **76**, 555-559. <https://doi.org/10.1038/pr.2014.137>
- [8] Guven, A., Giramonti, K. and Kogan, B.A. (2007) The Effect of Obesity on Treatment Efficacy in Children with Nocturnal Enuresis and Voiding Dysfunction. *Journal of Urology*, **178**, 1458-1462. <https://doi.org/10.1016/j.juro.2007.05.165>
- [9] Markland, A.D., Richter, H.E., Fwu, C.-W., Eggers, P. and Kusek, J.W. (2011) Prevalence and Trends of Urinary Incontinence in Adults in the United States, 2001 to 2008. *Journal of Urology*, **186**, 589-593. <https://doi.org/10.1016/j.juro.2011.03.114>
- [10] Patil, S.P., Ayappa, I.A., Caples, S.M., Kimoff, R.J., Patel, S. and Harrod, C.G. (2019) Treatment of Adult Obstructive Sleep Apnea with Positive Airway Pressure: An American Academy of Sleep Medicine Clinical Practice Guideline. *Journal of Clinical Sleep Medicine*, **15**, 335-343. <https://doi.org/10.5664/jcsm.7640>
- [11] Labarca, G., Schmidt, A., Dreyse, J., *et al.* (2021) Efficacy of Continuous Positive Airway Pressure (CPAP) in Patients with Obstructive Sleep Apnea (OSA) and Resistant Hypertension (RH): Systematic Review and Meta-Analysis. *Sleep Medicine Reviews*, **58**, 101446. <https://doi.org/10.1016/j.smrv.2021.101446>
- [12] Mokhlesi, B., Masa, J.F., Brozek, J.L., Gurubhagavatula, I., Murphy, P.B., Piper, A.J., *et al.* (2019) Evaluation and Management of Obesity Hypoventilation Syndrome: an Official American Thoracic Society Clinical Practice Guideline. *American Journal of Respiratory and Critical Care Medicine*, **200**, 1326. <https://doi.org/10.1164/rccm.201905-1071ST>
- [13] Gentina, T., Fortin, F., Douay, B., Dernis, J.M., Herengt, F., Bout, J.C. and Lamblin, C. (2010) Auto Bi-Level with Pressure Relief during Exhalation as a Rescue Therapy for Optimally Treated Obstructive Sleep Apnea Patients with Poor Compliance to Continuous Positive Airways Pressure Therapy: A Pilot Study. *Sleep and Breathing*, **15**, 21-27. <https://doi.org/10.1007/s11325-009-0322-y>
- [14] Blau, A., Minx, M., Peter, J.G., *et al.* (2012) Auto Bi-Level Pressure Relief-PAP Is As Effective as CPAP in OSA Patients: A Pilot Study. *Sleep and Breathing*, **16**, 773-779. <https://doi.org/10.1007/s11325-011-0574-1>
- [15] Carlucci, A., Ceriana, P., Mancini, M., Cirio, S., Pierucci, P., Lupo, N.D., Gadaleta, F., Morrone, E. and Fanfulla, F. (2015) Efficacy of Bilevel-Auto Treatment in Patients with Obstructive Sleep Apnea not Responsive to or Intolerant of Continuous Positive Airway Pressure Ventilation. *Journal of Clinical Sleep Medicine*, **11**, 981-985. <https://doi.org/10.5664/jcsm.5008>
- [16] Benjafield, A.V., PéPin, J.L.D., Valentine, K., Cistulli, P.A., Woehrle, H., Nunez, C.M., Armitstead, J. and Malhotra, A. (2019) Compliance after Switching from CPAP to Bilevel for Patients with Non-Compliant OSA: Big Data Analysis. *BMJ Open Respiratory Research*, **6**, E000380. <https://doi.org/10.1136/bmjresp-2018-000380>