Am, 1969, 51(4): 737-755.
[4] Linde F, Jensen J. Socket loosening in arthroplasty for congenital dislocation of the hip[J]. Acta Orthop Scand, 1988, 59(3): 254-257.
[5] Atilla B, Ali H, Aksoy MC, et al. Position of the acetabular component determines the fate of femoral head autografts in total hip replacement for acetabular dysplasia [J]. J Bone Joint Surg Br, 2007, 89(7): 874-878.
[6] Jasty M, Anderson MJ, Harris WH. Total hip replacement for developmental dysplasia of the hip[J]. Clin Orthop Relat Res, 1995, (311): 40-45.
[7] Dorr LD, Tawakkol S, Moorthy M, et al. Medial protrusio technique for placement of a porous-coated, hemispherical acetabular component without cement in a total hip arthroplasty in patients who have acetabular dysplasia[J]. J Bone Joint Surg Am, 1999, 81(1): 83-92.
[8] Perka C, Fischer U, Taylor WR, et al. Developmental hip dysplasia treated with total hip arthroplasty with a straight stem and a threaded cup[J]. J Bone Joint Surg Am, 2004, 86(2): 312-319.
[9] 寇伯龙, 袁燕林, 吕厚山, 等. 先天性髋臼发育不良继发骨性关节炎的外科治疗[J]. 中华外科杂志, 2001, 39(8): 623-625.
Kou BL, Yuan YL, LÜ HS, et al. Surgical treatment of congenital hip dislocation with osteoarthritis[J]. Zhonghua Wai Ke Za Zhi, 2001, 39(8): 623-625. Chinese.
[10] Garvin KL, Bowen MK, Salvati EA, et al. Long-term results of total hip arthroplasty in congenital dislocation and dysplasia of the hip. A follow-up note[J]. J Bone Joint Surg Am, 1991, 73(9): 1348-1354.
[11] 孙俊英, 郝跃峰, 杨沛彦, 等. 采用小臼杯置换与髋臼加深行全髋关节置换治疗 Crowe Ⅳ 型髋脱位[J]. 中国骨伤, 2009, 22(6): 407-409.
Sun JY, Hao YF, Yang PY, et al. Total hip replacement for the treatment of Crowe Ⅳ congenital hip dislocation using small acetabular components combined with medial protrusio technique[J]. Zhongguo Gu Shang/China J Orthop Trauma, 2009, 22 (6): 407-409. Chinese with abstract in English.
[12] 赵铁军, 张洪美, 陈卫衡, 等. 变异髋臼初次全髋人工关节置换术前设计及临床意义[J]. 中国骨伤, 2006, 19(8): 481-483.
Zhao TJ, Zhang HM, Chen WH, et al. Preoperative design and its clinical significance of the first time total hip arthroplasty for the variant acetabular [J]. Zhongguo Gu Shang/China J Orthop Trauma, 2006, 19(8): 481-483. Chinese with abstract in English.

(收稿日期: 2010-06-21　本文编辑: 王玉蔓)

·病例报告·

颈椎间盘突出致脊髓半切综合征 1 例

申国庆, 张浩, 谈应东, 李正文, 赵琪, 马骏
(酒泉市人民医院骨科, 甘肃　酒泉　735000)

关键词　颈椎;　椎间盘移位;　脊髓损伤
DOI: 10.3969/j.issn.1003-0034.2011.02.018

Diagnosis and treatment for Brown-Sequard Syndrome caused by cervical intervertebral disk herniation: a case report　*SHEN Guo-qing, ZHANG Hao, TAN Ying-dong, LI Zheng-wen, ZHAO Qi, MA Jun. Department of Orthopaedics, the People's Hospital of Jiuquan, Jiuquan* 735000, *Gansu, China*

KEYWORDS　Cervical vertebrae;　Intervertebral disk displacement;　Spinal cord injuries
Zhongguo Gu Shang/China J Orthop Trauma, 2011, 24(2): 161-162　www.zggszz.com

患者, 男, 58 岁, 因左侧肢体无力, 右侧肢体麻木 1 个月入院。病史: 患者于入院前 1 个月无明显诱因出现左侧肢体无力, 轻微麻木症状, 并出现右侧肢体感觉麻木, 较左侧严重。之后感觉左侧肢体无力加重, 行走时身体不自主向左侧偏移, 并有左足踩棉花的感觉, 无大小便异常。既往体健, 无外伤史。体格检查: 颈后部棘突压痛, 无放射痛。四肢肌张力正常, 无明显肌肉萎缩, 平乳头平面以下右侧肢体痛、温觉明显减退, 左上肢肌力 4 级, 左下肢肌力 3 级, 右侧肢体肌力 5 级。四肢生理反射活跃, 双侧压颈试验及上肢牵拉试验阳性, 左侧霍夫曼征阳性, 左侧巴彬斯基征阳性。颈椎 CT 扫描提示 C_4 椎体后缘骨质增生并局部钙化 (见图 1a); MRI 显示 $C_{3,4}$、$C_{4,5}$、$C_{5,6}$ 椎间盘突出, $C_{3,4}$、$C_{4,5}$ 为重并脊髓左侧半受压 (见图 1b-1c), T2 加权显示 $C_{4,5}$ 水平脊髓内信号改变。MRI 及 CT 发现颈椎椎管狭窄。行术前准备, 入院后第 3 天行颈前路 $C_{4,5}$ 椎体次全切除减压植骨融合内固定术(见图 1d)。术后 3 d 左上肢疼痛消失, 左侧肢体肌力明显改善, 右侧肢体痛温觉恢复。随访 3 个月, 植骨融合, 疗效良好。

通讯作者: 申国庆　E-mail: shen-guoqing@163.com

讨论

脊髓半切综合征由 Brown-Sequard 于 1849 年首次提出[1], 其病因报道多为脊髓外伤和椎管内髓外肿瘤等[2-3]。颈椎间盘突出压迫脊髓导致脊髓半切综合征报道较少, 检索见国内郝定均等[4]于 2007 年报道 3 例, 2009 年杨海松等[1]报道 2 例, 王松等[5]报道 4 例。杨海松等[1]和王松等[5]指出, 至 2009 年英文检索仅有 26 例。

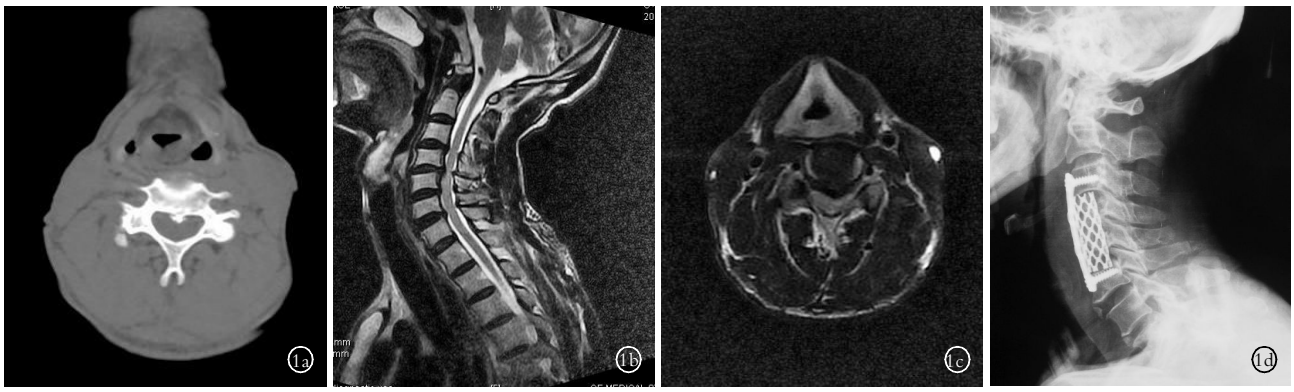

图 1　男性患者,58 岁,颈椎间盘突出致脊髓半切综合征　**1a**.C_4 椎体后缘骨质增生并局部钙化　**1b**.MRI 显示 $C_{3,4}$,$C_{4,5}$,$C_{5,6}$ 椎间盘突出　**1c**.MRI 显示 $C_{4,5}$ 平面脊髓左侧半受压明显　**1d**.次全切除 C_4、C_5 并钛网植骨固定后的侧位片

Fig.1　A 58-year-old male patient with Brown-Sequard syndrome caused by cervical intervertebral disk herniation　**1a**. Hyperosteogeny and local calcif in posterior edge of C_4 vertebral body　**1b**. MRI showed intervertebral disk herniation at $C_{3,4}$,$C_{4,5}$,$C_{5,6}$　**1c**. MRI showed spinal cord of $C_{4,5}$ on the left half-plane compression significantly　**1d**. The lateral X-ray view after operation of sub-total removal of C_4, C_5 with titanium mesh fixation

颈椎间盘突出导致脊髓半切综合征的特点:王松等[5]提出了颈椎间盘突出导致脊髓半切综合征的临床特点:①患者多为中老年人,多无明确外伤病史,有的患者多在不适当的治疗后引起;②起病多隐匿,常有逐步加重的肢体麻木无力,无典型根性症状,容易被患者及临床医师忽略;③与外伤、硬膜外肿瘤不同,颈椎间盘突出所致脊髓半切综合征多不典型;④病变节段与椎间盘突出节段一致,以 $C_{5,6}$ 最多见,占 65%,其次是 $C_{4,5}$、$C_{6,7}$,在 $C_{3,4}$ 及 $C_{2,3}$ 节段者也有报道,部分为双节段病变。本例患者从出现症状到就诊只有 1 个月左右的时间,明显短于文献报道的半年时间,考虑患者年龄大,$C_{4,5}$ 椎体后缘有增生的骨质,突出的间盘压迫明显,导致神经症状典型。

颈椎间盘突出导致脊髓半切综合征的术前检查:术前要常规检查 CT,了解后纵韧带有无骨化;MRI 检查因可以明确病变的节段及椎间盘突出的方向,并可以排除椎管内其他占位性病变、血肿及脊髓空洞等;MRI 更清晰的显示椎间盘突出的节段和突出的类型。本例患者 $C_{4,5}$ 突出最明显,$C_{3,4}$ 和 $C_{5,6}$ 也有突出的迹象,MRI 上可以看到脊髓信号有改变,CT 检查提示 $C_{4,5}$ 间隙后缘骨质增生,导致椎管有效容积减少,狭窄颈椎管内的脊髓受压更容易出现临床症状。

颈椎间盘突出导致脊髓半切综合征的治疗:颈椎间盘突出导致脊髓半切综合征的治疗,早期手术减压是一致的观点。手术方式包括后路半椎板或全椎板切除,前路椎间盘切除或椎体次全切除和椎间融合。考虑到脊髓的压迫来自前方,前路手术可以彻底减压,避免了后路间接减压不彻底、骚扰脊髓等缺点。本例术前计划前路 C_5 椎体次全切除、$C_{3,4}$ 椎间盘切除减压,融合术。术中发现 $C_{4,5}$ 间隙后缘后纵韧带肥厚并和硬脊膜粘连严重,分离困难,即行 C_4、C_5 椎体次全切除。本例患者术中次全切除两个椎体,神经彻底减压的同时增加了钛网融合失败的风险,并有钛网塌陷、下沉可能。为了防止并发症应采取措施:①加强颈部外固定:支具固定 12 周;②平卧时给予枕头,防止颈部过伸使内固定钢板牵拉松动而失效。

该患者手术后左侧上、下肢的肌力明显恢复,术后第 3 天右侧肢体的痛、温度觉恢复,明显快于相关报道[1,4]。可能是:①患者症状出现到手术时间短,仅为 1 个月;②术中次全切除的 C_4 和 C_5 两个椎体,减压彻底;③术中松解了后纵韧带和硬脊膜的粘连,完全切除了致压物;④规范的手术后固定及管理。目前患者已经手术后 3 个月,观察椎体完全融合,双侧下肢感觉运动完全恢复。

参考文献

[1] 杨海松,陈德玉,卢旭华,等. 颈椎间盘突出致脊髓半切综合征两例报告[J]. 中华骨科杂志,2009,29(9):887-888.
Yang HS, Chen DY, Lu XH, et al. Brown-Sequard syndrome caused by cervical intervertebral disk herniation: a report of 2 cases [J]. Zhonghua Gu Ke Za Zhi, 2009, 29(9): 887-888. Chinese.

[2] 马劲光,江振汝,刘广慧,等. 匕首刺入椎管致脊髓半切性损伤 2 例[J]. 中华神经外科杂志,2005,4(7):728.
Ma JG, Jiang ZR, Liu GH, et al. Brown-Sequard syndrome caused by dirk prick into vertebral canal: a report of 2 cases [J]. Zhonghua Shen Jing Wai Ke Za Zhi, 2005, 4(7): 728. Chinese.

[3] 周元安,黄菊红,万常玉,等. 手术切除治疗颈椎管内肿瘤的疗效观察[J]. 中国骨伤,2009,22(11):856-858.
Zhou YA, Huang JH, Wan CY, et al. Surgical treatment and effect observation of cervical intraspinal benign neoplasms[J]. Zhongguo Gu Shang/China J Orthop Trauma, 2009, 22(11): 856-858. Chinese with abstract in English.

[4] 郝定均,江仁奇,贺宝荣. 颈椎间盘突出导致 Brown-Sequard 综合征[J]. 中华骨科杂志,2007,27(2):142-143.
Hao DJ, Jiang RQ, He BR. Brown-Sequard syndrome caused by cervical intervertebral disk herniation[J]. Zhonghua Gu Ke Za Zhi, 2007, 27(2): 142-143. Chinese.

[5] 王松,王清,康建平. 颈椎间盘突出导致 Brown-Sequard 综合征的诊断及治疗[J]. 中国脊柱脊髓杂志,2009,19(11):879-880.
Wang S, Wang Q, Kang JP. Diagnosis and treatment of Brown-Sequard syndrome caused by cervical intervertebral disk herniation [J]. Zhongguo Ji Zhu Ji Sui Za Zhi, 2009, 19(11): 879-880. Chinese.

(收稿日期:2010-03-04　本文编辑:王宏)