中华骨科杂志 » 2013, Vol. 33 » Issue (10): 1004-1011 DOI: 10.3760/cma.j.issn.0253-2352.2013.10.005

平山病、肌萎缩性侧索硬化及远侧型肌萎缩型颈椎病的神经电生理特点

金翔,吕飞舟,陈文钧,夏新雷,王立勋,郑超君,姜建元

200040 上海，复旦大学附属华山医院骨科

Electrophysiological characteristics of Hirayama disease, amyotrophic lateral sclerosis and distal cervical spondylotic amyotrophy

JIN Xiang,LV Fei-zhou,CHEN Wen-jun,XIA Xin-lei,WANG Li-xun,ZHENG Chao-jun,JIANG Jian-yuan

Department of Orthopaedics, Huashan Hospital, Fudan University, Shanghai 200040, China

全文: PDF (706 KB) HTML (1 KB) 输出: BibTeX | EndNote (RIS) 背景资料

摘要 目的 探讨平山病、肌萎缩性侧索硬化及远侧型肌萎缩型颈椎病的上肢神经电生理特点。方法 回顾性分析87例平山病患者、83例肌萎缩性侧索硬化患者和28例远侧型肌萎缩型颈椎病患者的上肢神经电生理检测资料。其中87例平山病患者中，72例单侧上肢、15例双侧上肢出现肌肉萎缩；83例肌萎缩性侧索硬化患者中，30例单侧上肢、53例双侧上肢出现肌肉萎缩；28例远侧型肌萎缩型颈椎病患者中，20例单侧上肢、8例双侧上肢出现肌肉萎缩。结果 平山病患者患肢尺神经刺激的复合肌肉动作电位(compound muscle action potential，CMAP)波幅明显低于正中神经刺激的CMAP波幅，肌萎缩性侧索硬化患者患肢正中神经CMAP波幅明显低于尺神经CMAP波幅，远侧型肌萎缩型颈椎病患者正中神经和尺神经CMAP波幅降低程度相同。平山病患者的平均尺神经/正中神经(U/M)CMAP比为0.58±0.40，肌萎缩性侧索硬化为2.28±1.25，远侧型肌萎缩型颈椎病为1.31±0.63，三者比较差异有统计学意义。在U/M CMAP比值＜0.6的患肢中，平山病有62例，肌萎缩性侧索硬化和远侧型肌萎缩型颈椎病分别只有3例和1例；在U/M CMAP比值 ＞1.7的患肢中，肌萎缩性侧索硬化有57例，平山病有12例，远侧型肌萎缩型颈椎病有4例。所有患者双侧的运动神经和感觉神经传导速度、感觉神经动作电位波幅均正常，健肢的CMAP波幅均正常。结论 平山病患者小鱼际肌肉萎缩程度重于大鱼际肌，肌萎缩性侧索硬化患者与之相反，而远侧型肌萎缩型颈椎病患者大、小鱼际肌肉萎缩程度相似。

关键词： 颈椎病 肌萎缩 对比研究

Abstract： Objective To explore the electrophysiological charaterstics of upper extremities nerves on the patients with Hirayama disease (HD), amyotrophic lateral sclerosis (ALS), and distal cervical spondylotic amyotrophy (DCSA). Methods The data of electrophysiological examination of the upper limbs of 87 patients with HD, 83 with ALS and 28 with DCSA were reviewed retrospectively. Seventy-two patients with HD among 87 had unilateral upper limb's amyotrophy and the other 15 ones had bilateral amyotrophy. There were 30 patients had unilater upper limb's amyotrophy and 53 ones had bilateral amyotrophy from the group of patients with ALS; 20 patients with DSCA were affected unilaterally and 8 ones were bilaterally affected. Results Compound muscle action potential (CMAP) evoked by ulnar stimulation had a lower ampititude compared with that evoked by median stimulation in HD patients. In ALS cases that was just the opposite. However, the CMAPs were similar in DCSA cases. The mean ratio of CMAP amplitude by ulnar stimulation to by median stimulation was 0.58±0.40 in HD group; 2.28±1.25 in ALS and 1.31±0.63 in DCSA. The differences in the three groups were statistical significance. The U/M CMAP ratio was less than 0.6 in 62 patients with HD, 3 with ALS and 1 with DCSA, and more than 1.7 in 73 cases (57 ALS, 12 HD and 4 DCSA). Conduction velocities (CV) of the sensory and motor nerves, the amplitude of the sensory nerve action potential in bilateral limbs, and the CMAP amplitude of the unaffected limb were normal in all cases. Conclusion This study could concluded that the severity of amyotropy in hypothenar mucles were higher than that in thenal muscles in patients with HD; there was just opposite in ALS cases and similar in DSCA.

Key words： Cervical spondylosis Muscular atrophy Comparative study

收稿日期: 2013-10-21;

服务
- 把本文推荐给朋友
- 加入我的书架
- 加入引用管理器
- E-mail Alert
- RSS

作者相关文章
- 金翔
- 吕飞舟
- 陈文钧
- 夏新雷
- 王立勋
- 郑超君
- 姜建元

作者简介：姜建元，E-mail： jjy@hsguke.com

引用本文：

金翔,吕飞舟,陈文钧等. 平山病、肌萎缩性侧索硬化及远侧型肌萎缩型颈椎病的神经电生理特点[J]. 中华骨科杂志, 2013, 33(10): 1004-1011.

JIN Xiang,吕Fei-Zhou,CHEN Wen-Jun et al. Electrophysiological characteristics of Hirayama disease, amyotrophic lateral sclerosis and distal cervical spondylotic amyotrophy[J]. Chin J Orthop, 2013, 33(10): 1004-1011.

链接本文：

http://www.chinjorthop.com/Jwk_zhgkzz/CN/10.3760/cma.j.issn.0253-2352.2013.10.005 或
http://www.chinjorthop.com/Jwk_zhgkzz/CN/Y2013/V33/I10/1004

没有找到本文相关图表信息

[1] Hirayama K, Tsubaki T, Toyokura Y, et al. Juvenile muscular atrophy of unilateral upper extremity. Neurology, 1963, 13: 373-380.

[2] Tashiro K, Kikuchi S, Itoyama Y, et al. Nationwide survey of juvenile muscular atrophy of distal upper extremity (Hirayama disease) in Japan. Amyotroph Lateral Scler, 2006, 7(1): 38-45.

[3] Tandan R. Disorders of the upper and lower motor neurons//Bradley WG, Daroff RB, Fenichel GM, eds. Neurology in clinical practice. 2nd ed. Boston: Butterworth-Heinemann, 1996: 1823-1852.

[4] Crandall PH, Batzdorf U. Cervical spondylotic myelopathy. J Neurosurg, 1966, 25(1): 57-66.

[5] Tsuboi Y, Tokumaru Y, Hirayama K. Clinical difference between "proximal" and "distal" type of cervical spondylotic amyotrophy. Rinsho Shinkeigaku, 1995, 35(2): 147-152.

[6] Singh N, Sachdev KK, Susheela AK. Juvenile muscular atrophy localized to arms. Arch Neurol, 1980, 37(5): 297-299.

[7] Chen CJ, Hsu HL, Tseng YC, et al. Hirayama flexion myelopathy: neutral-position MR imaging findings--importance of loss of attachment. Radiology, 2004, 231(1): 39-44.

[8] Sonwalkar HA, Shah RS, Khan FK, et al. Imaging features in Hirayama disease. Neurol India, 2008, 56(1): 22-26.

[9] Brooks BR. El Escorial World Federation of Neurology criteria for the diagnosis of amyotrophic lateral sclerosis. Subcommittee on Motor Neuron Diseases/Amyotrophic Lateral Sclerosis of the World Federation of Neurology Research Group on Neuromuscular Diseases and the El Escorial "Clinical limits of amyotrophic lateral sclerosis" workshop contributors. J Neurol Sci, 1994, 124 Suppl: 96-107.

[10] Inui Y, Miyamoto H, Sumi M, et al. Clinical outcomes and predictive factors relating to prognosis of conservative and surgical treatments for cervical spondylotic amyotrophy. Spine (Phila Pa 1976), 2011, 36(10): 794-799.

[11] Kuwabara S, Sonoo M, Komori T, et al. Dissociated small hand muscle atrophy in amyotrophic lateral sclerosis: frequency, extent, and specificity. Muscle Nerve, 2008, 37(4): 426-430.

[12] Lyu RK, Huang YC, Wu YR, et al. Electrophysiological features of Hirayama disease. Muscle Nerve, 2011, 44(2): 185-190.

[13] Wilbourn AJ. The "split hand syndrome". Muscle Nerve, 2000, 23(1): 138.

[14] Hirayama K. Juvenile muscular atrophy of distal upper extremity (Hirayama disease). Intern Med, 2000, 39(4): 283-290.

[15] Elsheikh B, Kissel JT, Christoforidis G, et al. Spinal angiography and epidural venography in juvenile muscular atrophy of the distal arm "Hirayama disease". Muscle Nerve, 2009, 40(2): 206-212.

[16] Restuccia D, Rubino M, Valeriani M, et al. Cervical cord dysfunction during neck flexion in Hirayama's disease. Neurology, 2003, 60(12): 1980-1983.

[17] Toma S, Shiozawa Z. Amyotrophic cervical myelopathy in adolescence. J Neurol Neurosurg Psychiatry, 1995, 58(1): 56-64.

[18] Keegan JJ. The cause of dissociated motor loss in the upper extremity with cervical spondylosis. J Neurosurg, 1965, 23(5): 528-536.

[19] Yanagi T, Kato H, Sobue I. Clinical characteristics of cervical spondylotic amyotrophy. Rinsho Shinkeigaku, 1976, 16(7): 520-528.

[20] Katsuoka H, Mimori Y, Harada A, et al. An elderly case of juvenile muscular atrophy in the unilateral upper extremity with tremor in both hands. Nihon Ronen Igakkai Zasshi, 1999, 36(4): 279-283.

[21] Okumura H, Homma TT. Juvenile compression myelopathy in the cervical spine. Spine (Phila Pa 1976), 1994, 19(1): 72-76.

[22] Weber M, Eisen A, Stewart H, et al. The split hand in ALS has a cortical basis. J Neurol Sci, 2000, 180(1-2): 66-70.

[23] Schelhaas HJ, van de Warrenburg BP, Kremer HP, et al. The "split hand" phenomenon: evidence of a spinal origin. Neurology, 2003, 61(11): 1619-1620.

[1] 李晖,郑永发,冯世庆,李清. 全膝关节置换术后不同引流方式的临床对比研究[J]. 中华骨科杂志, 2013, 33(8): 815-819.

[2] 张晋,洪雷,王雪松,张辉,沈杰威,冯华. 基于后十字韧带的膝关节多发韧带损伤两种重建技术的对比研究[J]. 中华骨科杂志, 2013, 33(5): 480-486.

[3] 周志杰,范顺武,方向前,赵兴,胡志军,赵凤东. 小切口与传统开放术式单节段后路腰椎椎体间融合术后邻近节段退变的对比研究[J]. 中华骨科杂志, 2013, 33(2): 136-141.
[4] 万军,张海森,张宇,贺强,于斌,夏英鹏,张学利. 比较单开门颈椎椎板成形术中锚定法与钛板固定对预防椎板关闭的效果[J]. 中华骨科杂志, 2013, 33(10): 977-983.
[5] 钱宇,何磊,赵晓峰,张军. 颈椎前路减压植骨融合术后的脊髓前移[J]. 中华骨科杂志, 2013, 33(10): 997-1003.
[6] 王勇, 许兵, 吴银生, 张鸿振, 杨益宇. 直切口与Judet入路治疗肩胛骨颈部及体部骨折的对比研究[J]. 中华骨科杂志, 2013, 33(10): 1018-1023.
[7] 张颖,王新伟,陈华江,杨立利,徐盛明,吕碧涛,张竞,袁文. 单纯前路手术治疗“钳夹型”颈椎病的疗效[J]. 中华骨科杂志, 2012, 32(8): 714-720.
[8] 刘好源,黄哲元,陈峰嵘,黄建明,龚灏,徐天睿,简国坚,王博文,陈瑞松,易碧龙. 跳跃性椎体次全切除治疗多节段脊髓型颈椎病及后纵韧带骨化症[J]. 中华骨科杂志, 2012, 32(8): 721-725.
[9] 田伟,吕艳伟,刘亚军,肖斌,韩骁. 北京市18岁以上居民颈椎病现况调查研究[J]. 中华骨科杂志, 2012, 32(8): 707-713.
[10] 李君,王新伟,袁文,陈德玉,陈宇,梁磊,王占超,姜东杰. 颈椎管成形术与椎板切除内固定术后C_5神经根麻痹比较[J]. 中华骨科杂志, 2012, 32(5): 415-419.
[11] 梁磊,王新伟,袁文,李君,陈华江,祁敏,王占超. 颈椎间盘置换术治疗伴交感神经症状颈椎病的早期疗效[J]. 中华骨科杂志, 2012, 32(5): 389-392.
[12] 郑燕平,刘新宇,原所茂. Wiltse入路经椎间孔腰椎椎体间融合术治疗单节段腰椎峡部裂性滑脱[J]. 中华骨科杂志, 2011, 31(9): 921-925.
[13] 任龙喜, 郭函, 张彤童, 韩正锋, 尹建, 梁喜斌, 张向飞. 经皮激光椎间盘减压术治疗神经根型颈椎病中期疗效观察[J]. 中华骨科杂志, 2011, 31(10): 1044-1048.
[14] 郑燕平,刘新宇,原所茂. Wiltse入路经椎间孔腰椎椎体间融合术治疗单节段腰椎峡部裂性滑脱[J]. 中华骨科杂志, 0, (): 921-925.

地址:天津市河西区解放南路406号天津医院内 邮编:300211
电话: 86-22-28334734 86-22-28278929 传真: 86-22-28241184 E-mail:gktougao@126.com