

Wrestling induced cervical spondylosis

M. Hassani Barzi

ارزیابی اسپوندیلوز گردنی در کشتی گیران

دکتر سید محسن حسنی برزی *

چکیده

زمینه : تنگ شدن فضای بین مهره‌های گردنی فرایندی تخریبی است که در برگرنده تغییراتی در بافت نرم و استخوان دیسک‌های بین مهره‌ای می‌باشد.

هدف: مطالعه به منظور ارزیابی اسپوندیلوز گردنی در کشتی گیران انجام شد.

مواد و روش‌ها: ۸۳ فرد کشتی گیر و ۷۹ فرد غیر کشتی گیر با میانگین سنی ۱۵ تا ۵۵ سال مورد مطالعه قرار گرفتند. به منظور تعیین تغییرات در طناب نخاعی، کشتی گیران با علائم بالینی و رادیوگرافی تأیید شده در مورد اسپوندیلوز گردنی، تحت ام. آر. آی قرار گرفتند.

یافته‌ها: افزایش سن در کشتی گیران با بروز علائم اسپوندیلوز گردنی همراه بود. ام. آر. آی گردنی برخی از کشتی گیران که به مدت طولانی این ورزش را ادامه داده بودند، تغییراتی را مبنی بر اسپوندیلوز گردنی تأیید کرد.

نتیجه‌گیری: اندازه‌گیری کانال مهره‌های گردنی به وسیله رادیوگرافی‌های مستمر به منظور پیشگیری از بروز اسپوندیلوز در کشتی گیران جوان ضروری به نظر می‌رسد.

کلید واژه‌ها: اسپوندیلوز گردنی، فقران گردنی، ورزش کشتی

Abstract

Background : Cervical spondylosis is a degenerative process involving changes in soft tissue and bone of intervertebral discs.

Objective: To evaluate wrestling induced cervical spondylosis.

Methods: 83 male wrestlers with the age range of 15 to 55 were randomly studied against 79 nonwrestlers of the same age . Clinical and radiological assesments were carried out and recorded in both groups. Wrestlers with clinical signs of CS and confirmed lateral radiograms were subjected to MRI studies to obviate any spinal cord changes.

Findings: The findings indicated that wrestling coupled with advancing age can initiate the process of CS. Cervical MRI of some wrestlers with long period of wrestling confirmed the pathologic changes of CS.

Conclusion: It seems mandatory to have routine cervical radiographs to gauge the width of spinal canal and rule out stenosis to prevent the development of CS in young wrestlers.

Keywords: Cervical Spondylosis, Cervical Segments, Wrestling

□ Introduction:

Cervical spondylosis (CS) is a degenerative process involving intervertebral discs with soft tissue and bony changes (1,4,13). It is associated with advancing age and jogging movements of the cervical segments.

Chronic cervical injuries due to wrestling have not been widely explored in sport medicine.

This paper reviews our study of westlers and discusses the results in the context of our own and current data suggesting that the threshold for traumatic spinal injury and the prevalence of CS may be considerably higher in wrestlers.

□ Methods:

A number of 83 male wresters, with the age range of 15 to 55 were randomly studied against 79 nonwrestlers of the same age. Clinical and radiological assessments were carried out and recorded in both groups.

In lateral cervical radiographs, changes

such as osteophytes, disc space height narrowing and canal stenosis were evaluated in both groups. Wrestlers with clinical signs of CS and confirmed lateral radiograms were subjected to MRI studies to obviate any spinal cord changes.

Cases with clinical signs of nuchal pain and movement restriction not related to CS were excluded from the study.

□ Findings :

The findings about 72 wrestlers and 75 non wrestlers were summarized in table 1.

Considring age group in table 1 and using Z test, a singificant difference between two groups for developing CS in age range of group 45-54 year was obtained ($p < 0.05$).

Wrestling coupled with advancing age can initiate the process of CS. Cervical MRI of some wrestlers with a long period of wrestling confirmed the pathologic changes of CS.

Table 1 : Radiological and clinical findings of wrestlers and control group

Age(Ys)	Wresters radiogram				non- Wresters readiogram			
	NO	normal	CS changes	Clinical sings	NO	normal	CS changes	Clinical sings
15-24	32	27	5	1	30	29	1	0
25-37	25	15	7	5	26	23	3	1
35-44	5	2	6	5	10	6	4	1
45-54	7	1	6	5	9	6	3	1
Total	72	48	24	16	75	64	11	3

□ Conclusion :

Cervical spondylosis defined as a degenerative process of disc associated with changes in soft tissue and bone is frequently seen in the lower cervical segments. Fibrosis and osteophytes around the disc are formed for stabilizing the joints.^(1,4,13)

Considering the role of sport in CS, two important factors seems to be involved

namely as movement of the neck and aging.⁽²⁾ *Among predisposing factors, jobs incurring repetitive movements of the cervical spine can initiate CS. After the fifth decade of life, a definite enhancement of degenerative processes is seen in the structures of the body.*⁽¹⁰⁾ *Disc degeneration occurs frequently in lower cervical segments, but injuries at C3 C4 space or higher levels are less common.*⁽¹²⁾

Neurologically, CS eventually leads to myelopathy which presents the weakness of lower limbs along with radiculopathies of upper limbs.^(1,4,13) *Spondylotic myelopathy is thought to stem from at least three treatable factors: spinal stenosis, osteophyte and*

relatively excessive spinal mobility.^(6,10)

Flexion and extension of the neck bring about changes in the spinal canal diameter frequently seen in wrestlers.⁽²⁾

Increased movements of the cervical spine along with augmented vertebral joints movement cause high incidence of degeneration and CS at C5 C6 segments⁽⁹⁾

likewise superimposition of a previously stenosed canal leads to myelopathy⁽¹¹⁾ *and aging is also incriminated to cause spondylosis.*⁽⁵⁾

The ratio sagital diameter of the canal to sagital diameter of the adjacent vertebral body (torg ratio) is said to be normally 1/1. A ratio less than 8/10 indicates canal stenosis. Sportsmen with torg ratio less than 8/10 are probably predisposed to cervical spinal cord damage and developing myelopathy.⁽⁷⁾

Acute cervical trauma and locked in syndrome with ischemic lesions of the ventral pons, in sport like karate have been reported.⁽⁶⁾

It seems conceivable that wrestling generating augmented movement of

the cervical spine or repetitive strains in the form of microtrauma can expedite the pathologic process of CS. It is increasingly clear that future therapies of wrestlers prone to develop CS will be multifaceted combining surgery and physiological measures tailored to counteract specific pathological events.

Regarding prevalence of CS and significant differences between wrestler and nonwrestlers in this study. The following suggestions are recommended:

Fearing the development of CS in young wrestlers, it seems mandatory to have routine cervical radiographs to gauge the width of spinal canal and rule out stenosis.

The fact that many situations of incomplete or impending CS may be anticipated supports a more active therapeutic attitude in everyday clinical practice in the form of a careful scrutiny. Wrestlers with long duration of wrestling need more care.

□ References :

1. Back DW. Cervical spondylosis, clinical finding and treatments. *Contemporary Neurosurgery* 1991; 3 (11): 1- 6
2. Cusick JF, Myklebust JB. Biomechanics of cervical spondylotic myelopathy. *Contemporary Neurosurgery* 1987; 9 (11): 1-7
3. Harrington JF, Likavec MJ, Smith AS. Disc herniation in cervical fracture subluxation. *Neurosurgery* 1991 ; 29 (3): 374-9
4. Hoff JT. Cervical disc disease and cervical spondylosis. In: Wilkins RH, Rengachary SS, eds. *Neurosurgery*. New York, McGraw Hillbook Co, 1985, 2230-9
5. Menard D, Stanish WD. The aging athlete. *Am J Sports Medicine* 1989; 17 (2): 187-96
6. Maurer PK, Ellenbogen RG, Ecklund J, et al. Cervical spondylotic myelopathy, treatment with posterior decompression and luque rectangle bone fusion. *Neurosurgery* 1991; 28 (5): 680 - 4
7. Odor JM, Watkins RG, Dillin WH, et al. Incidence of cervical spinal stenosis in professional and rockie football player. *Am J Sports Medicine* 1990; 18 (5): 507 - 9

8. Pentore R, Nichelli P. Differentiated state syndrome (Locked - in - synd) following sudden cervical sprain trauma during a karate training session . *Rev Neurol* 1991; 61(2): 660-70
9. Perneczky G, Bock FW, Neuhold A, Stiskal M. Diagnosis of cervical disc disease, MRI Versus cervical myelopathy. *Acta neurochir* 1992; 116 (1): 44 - 8
10. Saunders RL , Bernini PM, Shirreffs TG, et al. Central corpectomy for cervical spondylotic myelopathy, a consecutive series with long term follow up evaluation. *J Neurosurg.* 1991; 74: 163 - 70
11. Simeone FA, Dillin WA. Treatment of cervical disc disease, selection of operative approach. *Contemporary Neurosurgery* 1986; 8 (14): 1 - 6
12. Torg JS, Senett B, Vengsu JJ, Parlv H. Axial loading injuries to the middle cervical segments, an analysis and classification of 25 cases. *Am J Sports Medicine* 1991; 16 (1): 6 - 20
13. Youman JR, Tarlov EC. Tarlov Extradural spinal cord and nerve root compressions from benign lesions of cervical area. in: youman J R. *Neurological surgery.* Philadelphia, saunders co, 1991; 2241 - 83