SPINE Volume 25, Number 10, pp 1317–1318

Letters

To the Editor:

Re: Is Occupational Low Back Pain on the Rise? (Spine 1999;24:691–7).

I read with interest the article by Murphy and Volinn in which the authors presented data indicating that occupational low back pain has been decreasing since the beginning of the 1990s. While preparing a future research article, I independently compiled the same statistical trend.

One of the three sources that Murphy and Volinn reported on was the Bureau of Labor Statistics, Department of Labor (BLS/DOL). Similar to those researchers, I was also analyzing data from BLS/DOL. For this database, Murphy and Volinn focused on the 4-year period, 1992–1995. I was able to add data for the years 1996 and 1997, which had been posted on websites established by BLS/DOL.

In addition, two items that were not focused on in the previous study were (1) the number of lumbar-related cases and (2) the total number of days-away-from-work for a variety of categories. These data are also available from BLS. My analyses of the days-away-from-work incidents, for the years 1992–1997, focused on: (1) the total number of lost-time cases, (b) all types of back injuries (including the spine and spinal cord), and (c) all lumbar-related back injuries (Department of Labor, Bureau of Labor Statistics, 1995–1998, plus two 1999 BLS Web citations).

Table 1 presents the number of cases and an estimate of the corresponding numbers of days-away-from-work for the three categories. Only estimates can be provided for days-away-from-work since these data are presented in discrete ranges. A straightforward method of estimating the totals in Table 1 (rows 2, 4, 6) involved multiplying the numbers of workers listed in each discrete range by the median of that range and summing them. The last range (of days-away-from-work) is ≥ 31. For this calculation, only the value of 31 was used since there was no way of knowing the upper endpoint.

As indicated in the last column of Table 1, between 1992 and 1997, the total number of nonfatal injuries and illnesses with days-away-from-work decreased by 21.4%, while the number of back injuries (of all types) decreased by 27.7%. The number of lumbar-related

Table 1. Days-Away-From-Work Cases Due to Back Injuries, All U.S. Industries, 1992–1997

	1992*	1993*	1994*	1995*	1996†	1997‡	% Decrease (1992–1997)
Total cases, (days-away-from-work)	2,331,100	2,252,591	2,236,639	2,040,929	1,880,525	1,883,380	21.4%
Estimated§ days-away-from-work	~27,565,259	~26,099,645	~25,837,564	~22,912,490	~21,510,386	~21,170,039	~23.2%
All back-related, (incl. spine, spinal cord)	653,400	615,010	606,545	540,047	490,608	472,091	27.7%
(pct total cases)	(28.0%)	(27.3%)	(27.1%)	(26.5%)	(26.1%)	(25.7%)	
Estimated§ days-away-from-work	~8,113,001	~7,405,029	~7,164,206	~6,083,629	~5,638,312	~5,370,979	~33.8%
(pct of total, row 2)	(29.4%)	(28.4%)	(27.7%)	(26.6%)	(26.2%)	(25.4%)	
Lumbar cases only	254,800	257,309	253,920	232,728	223,651	219,571	13.8%
(pct of all-back . . .)	(39.0%)	(41.8%)	(41.9%)	(43.1%)	(45.6%)	(46.5%)	
(pct of total cases)	(10.9%)	(11.4%)	(11.4%)	(11.4%)	(11.9%)	(12.0%)	
Estimated§ days-away-from work	~3,159,138	~3,069,696	~2,965,659	~2,626,801	~2,608,554	~2,479,725	~21.5%
(pct of total row 2)	(11.5%)	(11.8%)	(11.5%)	(11.5%)	(12.1%)	(11.7%)	
(pct of est in row 4)	(38.9%)	(41.4%)	(41.4%)	(43.2%)	(46.3%)	(46.2%)	

* Data from Bureau of Labor Statistics, "Annual Surveys." [Refs: "Occupational Injuries and Illnesses: Counts, Rates, and Characteristics, 1992, 1993, 1994, and 1995. Bulletin 2455 (April 1995), Bulletin 2478 (August 1996), Bulletin 2485 (April 1997), and Bulletin 2493 (March 1998), respectively.
† Data from http://stats.bls.gov./special.requests/ocwc/oshwc/osh/case/ostb0562.txt
‡ Data from http://stats.bls.gov./special.requests/ocwc/oshwc/osh/case/ostb0689.txt
§ Straightforward estimation from statistics provided in the annual surveys and the two web citations.

back injuries decreased only 13.8% during the same 6-year period.

Surprisingly, the total number of back injuries (of all types) is decreasing more quickly than the decrease in the total number of days-away-from-work cases. More importantly, the total number of lumbar cases is decreasing at only one-half the rate of the "all types" of back-related injuries. In fact, as a percentage of "all types" of back-related incidents, the lumbar cases have increased from 39.0% to 46.5% (fifth row, upper percentage), a 19% increase over the 6-year period. Although the raw totals have been steadily decreasing, the lumbar-related injuries still represent a major concern for U.S. industries.

Thomas G. Bobick, PhD
National Institute for Occupational Safety and Health
Protective Technology Branch
Morgantown, West Virginia

To the Editor:

Re: Posterior Occipitocervical Reconstruction Using Cervical Pedicle Screws and Plate-Rod Systems (Spine 1999;24:1425–34).

We enjoyed the important article entitled "Posterior Occipitocervical Reconstruction Using Cervical Pedicle Screws and Plate-Rod Systems" by Abumi et al. We have also employed a rigid plate and pedicle screw system for occipitocervical fixation since 1992. The initial 24 cases will be published in the *Journal of Neurosurgery: Spine* later this year.

We fully agree that distraction followed by rigid fixation often eliminates the need for anterior decompression. Correction of deformity not only in the sagittal plane but also in the coronal and axial planes is also often possible. Rigid occipitocervical fixation is a dramatic improvement over older nonrigid or semirigid techniques.

We also agree that lateral mass screw fixation of the cervical end is inadequate even with multiple screws. We do not agree, however, that fixation of the lateral suboccipital bone as applied in this article is adequate. The lateral suboccipital bone is often only 3–6mm in thickness. For the same reason that lateral mass screw fixation at the cervical end is inadequate, lateral suboccipital bone purchase is also often doomed to failure. The very long moment arm applied across occipitocervical plates or rods is often beyond what can be reasonably resisted with lateral suboccipital bone purchase.

Indeed, Abumi et al report one case of suboccipital screw pullout in their series. In the initial 10 cases of our series, we also applied lateral suboccipital screws. There were three cases (30%) of occipital screw pullout. Since then, we have used a device which allows purchase of the occipital midline keel where the bone is 11–17mm thick allowing multiple long screw purchase. There have been no screw pullouts using this system.

We are currently revising this system to allow use with constrained cervical pedicle screws and rods. Indubitably, further evolution of such systems will continue to unfold.

The authors are to be congratulated on a series well-documented and well-presented.

David Cahill, MD, FACS
Professor and Acting Chairman
Department of Neurological Surgery
University of South Florida College of Medicine
Tampa, Florida