In this study, the authors reviewed the incidence of a previous whiplash injury in 215 patients who underwent an anterior cervical discectomy and fusion. The rate of this disc surgery was found to be twice that of a control population of 800 general orthopaedic outpatients. The mean age at which the whiplash injury occurred in the surgical group was 37 years and in the control group 36 years. The mean age at operation of those patients with a previous whiplash injury (45 +/- 12 years) was significantly less than those patients without a previous whiplash injury (55 +/- 14 years). This study provides further evidence that whiplash injury causes structural changes predisposing to premature degenerative disc disease.

The purpose of this study was to determine if whiplash injury predisposes to surgically proven cervical disc degeneration. They found that 11% of the whiplash-injured patients required cervical disc surgery while only 5% of the control population required cervical disc surgery. Therefore the cervical disc surgery rate was less than half in the control population as compared to those with whiplash injury. Although both the whiplash injury group and the control population were age matched, the mean age for surgery in the whiplash-injured group was 45 years and for the control non-injured group was 55 years. This 10-year difference was "significantly less."

"This study demonstrates an increased association between whiplash injury and cervical disc disease."

These authors reference a number of studies that make these points:

1) Acute post-traumatic cervical angular kyphosis developed into frank cervical spine degenerative change within 5 to 7 years. (1974)
2) The prevalence of degenerative changes in the cervical spine in patients with whiplash in their 4th and 5th decade were equivalent to those found in the control population that were 10 and 20 years older. (1991)

3) MRI findings of cervical hyperextension injuries showed separation of the cervical disc from the endplate, anterior annular tears, occult anterior vertebral endplate fractures, and anterior longitudinal ligament injuries at multiple levels. (1991)

4) A study was “unable to demonstrate that psychosocial stress played any role in the outcome of whiplash injury.” (1991)

5) Four studies “demonstrated that patients continued to experience symptoms after settlement of litigation, suggesting that financial gain played little part.” (1964, 1965, 1975, 1990)

   “These data suggests that the symptoms and signs of whiplash injury cannot be attributed solely to psychological factors and the organic pathology is a more constant explanation.”

KEY POINTS FROM DAN MURPHY

1) The purpose of this study was to determine if whiplash injury predisposes to surgically proven cervical disc degeneration.

2) 11% of the whiplash-injured patients required cervical disc surgery while only 5% of the control population required cervical disc surgery. Therefore the cervical disc surgery rate was more than doubled in the whiplash-injured group.

3) Although both the whiplash injury group and the control population were age matched, the mean age for surgery in the whiplash-injured group was 45 years and for the control non-injured group was 55 years. This 10-year difference was “significantly less.”

4) “This study demonstrates an increased association between whiplash injury and cervical disc disease.”

These authors reference a number of studies that make these points:

A)) Acute post-traumatic cervical angular kyphosis developed into frank cervical spine degenerative change within 5 to 7 years. (1974)

B)) The prevalence of degenerative changes in the cervical spine in patients with whiplash in their 4th and 5th decade were equivalent to those found in the control population that were 10 and 20 years older. (1991)
C) MRI findings of cervical hyperextension injuries showed separation of the cervical disc from the endplate, anterior annular tears, occult anterior vertebral endplate fractures, and anterior longitudinal ligament injuries at multiple levels. (1991)

D) A study was “unable to demonstrate that psychosocial stress played any role in the outcome of whiplash injury.” (1991)

E) Four studies “demonstrated that patients continued to experience symptoms after settlement of litigation, suggesting that financial gain played little part.” (1964, 1965, 1975, 1990)

5) “These data suggests that the symptoms and signs of whiplash injury cannot be attributed solely to psychological factors and the organic pathology is a more constant explanation.”

6) “This study provides further evidence that whiplash injury causes structural changes predisposing to premature degenerative disc disease.”