

# **Whiplash Injuries: Their Long-term Prognosis and its Relationship to Compensation**

**Neuro-Orthopedics**

**No.7, 1989, pp. 88-91**

SP Hodgson and M Grundy

FROM ABSTRACT:

We have reviewed 40 patients between 10 and 15 years after neck injuries sustained in road-traffic accidents and have assessed the incidence of residual symptoms and their relationship to compensation.

The group consisted of 26 who had sustained a true whiplash injury due to an impact from behind and 14 who had sustained injuries due to other mechanisms.

The incidence of residual symptoms in the whiplash group (62%) was much greater than that in the non-whiplash group (14%).

Only 10 of 40 patients had symptoms improve following settlement of compensation.

The 30 patients who have remained unchanged since settlement would suggest that settlement of compensation does not always result in resolution of symptoms.

THESE AUTHORS ALSO NOTE:

Soft-tissue injuries of the neck from road traffic accidents frequently cause significant disability.

"It has been suggested that prolonged symptoms after whiplash injuries may be neurotic in nature and are likely to improve when compensation has been settled, though there is little evidence to support this view."

There are 2 classic surveys of whiplash injuries after settlement:

1) Gotten N, Survey of 100 cases of whiplash injury after settlement of litigation, Journal of the American Medical Association, 162, 1956, pp. 865-867.

This study reviewed cases between 1 – 26 months after claim settlement.

Although Gotten concluded that "88% showed recovery," a "closer reading of his paper showed that nearly half had some persisting symptoms and that 12% had residual disability."

2) MacNab I, Acceleration injuries of the cervical spine, Journal of Bone and Joint Surgery (American), 46, 1964, 121-137.

Although MacNab "made the somewhat extreme assumption that all those not attending for review were cured," he "still found 45% of patients with persisting symptoms."

"It seems, therefore, that whiplash injuries can cause prolonged symptoms and disability." **[Important]**

In this study, these authors examined the long-term (more than 10 years) symptoms after whiplash neck injury and compared them to those who had similar neck injuries but caused by a mechanism other than whiplash trauma, and to study the effect of settlement of compensation on the duration of symptoms.

The mean duration of follow-up of these patients was 12.5 years with a minimum of 10 years.

All injury claims had been settled within 2 years of injury occurrence.

The 62% of patients still having symptoms in the whiplash group was significantly higher than the 14% still having symptoms in the non-whiplash group.

Most patients with whiplash injuries pursue compensation claims.

"Many previous studies have shown that there is a significant incidence of long-term symptoms following whiplash injury and this is confirmed by our study. Extending the follow-up to a mean of 12.5 years we have shown that almost two thirds of the patients reviewed have significant residual symptoms."

"Accepting that there is a definite incidence of residual [whiplash] symptoms, even at long-term follow-up," the important questions are:

- 1) Are long-term symptoms due to post-traumatic neurosis?
- 2) Are long-term symptoms due to the development of secondary degenerative changes?
- 3) Are long-term symptoms due to the effects of soft tissue damage?

### **1) Are long-term symptoms due to post-traumatic neurosis?**

There are several factors which would support the view that whiplash is an injury with long-term physical problems:

A) If long-term symptoms were solely or largely due to the development of a posttraumatic neurosis we would have expected the neck injury groups to have

similar incidence of long-term symptoms as they all had sustained similar injuries and were all seeking compensation, yet in the whiplash injured group the incidence of residual symptoms was four times greater than the non-whiplash injured group.

B) "Secondly, if symptoms were largely due to impending litigation it might be expected that symptoms would improve after settlement of the claim. Our results would seem to discount this theory, with the long-term outcome seeming to be determined before the settlement of compensation."

C) Thirdly, other injuries and symptoms associated with the whiplash injuries tended to resolve whilst the neck injuries continued to produce symptoms.

## **2) Are long-term symptoms due to the development of secondary degenerative changes?**

"If this were the case, one would expect to find a progressive worsening of symptoms with time [and worsening of degeneration] whereas it is remarkable in this series that in the majority of patients their symptoms have remained at the same level for many years." **[Very Important]**

Therefore, it is "unlikely that secondary degenerative change plays a significant part in the production of symptoms or is a significant late risk of whiplash injury."

## **3) Are long-term symptoms due to the effects of soft tissue damage?**

Experimental evidence by MacNab found lesions such as tears of the longitudinal ligament accompanied by retropharyngeal hematoma and even tears extending into the spinal column in the form of a detachment of a disc from the vertebral end-plate.

"It would be surprising, therefore, if some whiplash injuries did not cause permanent and irreversible tissue damage."

## **CONCLUSION**

We conclude that the "prolonged symptoms after a whiplash injury are more likely to be due to physical causes than to any form of neurosis" **[Very Important]**

"We would conclude that a whiplash injury has a significant likelihood of resulting in long-term symptoms which in the majority of cases may be physical in nature, and that the settlement of compensation is unlikely to affect the long-term outcome." **[Very Important]**

## **KEY POINTS FROM DAN MURPHY**

1) Soft-tissue injuries of the neck from road traffic accidents frequently cause significant disability.

- 2) The classic studies by Gotten (Journal of the American Medical Association, 1956) and MacNab (Journal of Bone and Joint Surgery, 1964), indicate that "whiplash injuries can cause prolonged symptoms and disability." **[Important]**
- 3) "Many previous studies have shown that there is a significant incidence of long-term symptoms following whiplash injury and this is confirmed by our study. Extending the follow-up to a mean of 12.5 years we have shown that almost two thirds of the patients reviewed have significant residual symptoms."
- 4) Whiplash is an injury with long-term physical problems. Long-term whiplash symptoms due to the effects of soft tissue damage.
- 5) Long-term whiplash symptoms are not due to posttraumatic neurosis because settlement of compensation rarely improves the long-term symptoms and because other associated injuries rarely result in long-term symptoms. This indicates that whiplash symptoms are physical and unique as compared to other associated injuries.
- 6) Long-term whiplash symptoms are not due to the development of secondary degenerative changes because long-term patients symptoms remain at the same level for many years whilst degenerative changes progress over time.
- 6A) Therefore, it is "unlikely that secondary degenerative change plays a significant part in the production of [late-whiplash] symptoms."
- 7) Studies prove that whiplash trauma can cause tears of the anterior longitudinal ligament, retropharyngeal hematomas and tears extending into the spinal column in the form of a detachment of a disc from the vertebral end-plate.
- 7A) "It would be surprising, therefore, if some whiplash injuries did not cause permanent and irreversible tissue damage."
- 8) The "prolonged symptoms after a whiplash injury are more likely to be due to physical causes than to any form of neurosis" **[Very Important]**
- 9) "We would conclude that a whiplash injury has a significant likelihood of resulting in long-term symptoms which in the majority of cases may be physical in nature, and that the settlement of compensation is unlikely to affect the long-term outcome." **[Very Important]**