WHIPLASH INJURIES

TREATMENT RELATED TO PATHOLOGY AND STAGES OF HEALING

by Helen David, BSc (Physiotherapy)
Witwatersrand, Private Practitioner, Johannesburg

The term "whiplash" is used to describe neck injuries resulting from rapid acceleration-deceleration forces, usually due to motor vehicle accidents (MVA's). Whiplash patients present a formidable challenge to physiotherapists because of the extremely variable range of clinical presentations and owing to the unpredictability of the end result of treatment.

Whiplash patients have been labelled hysterical, neurotic, if not frankly dishonest as they often continue to complain of pain and other symptoms for unexpected lengths of time, even well after the settlement of any court cases.

Recent literature has provided some clues to this problem. In addition to the injuries to muscles, ligaments and joints, Twomey and Taylor have shown that there is a strong possibility that whiplash may cause rim lesions of the discs. These rim lesions are linear clefts within the cartilage plate near the vertebral rim and extending into the annulus. According to an experimental study in sheep by Osti et al, such lesions do not heal (except for the outermost part of the annulus) but continue to extend within the disc over the year following the injury ie, a process of degeneration is set in motion. This is one possible explanation for persistent symptoms in whiplash patients.

Another possibility is that injuries may be more extensive than suggested by radiographs and may include disc lesions and fractures of bony elements. Jonsson et al studied 22 cervical spines from MVA victims with fatal injuries. They describe injuries found at autopsy which had been missed on post-mortem X-rays. In total, there were 245 bone and discoligamentous lesions and fractures of bony elements. Jonsson et al studied 22 cervical spines from MVA victims with fatal injuries. They describe injuries found at autopsy which had been missed on post-mortem X-rays. In total, there were 245 bone and discoligamentous lesions and fractures of bony elements. Jonsson et al studied 22 cervical spines from MVA victims with fatal injuries. They describe injuries found at autopsy which had been missed on post-mortem X-rays.

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MATERIAL AND METHODS

Twelve whiplash patients were selected retrospectively, with their consent, for this study. They were selected on the basis of their arrival for the initial treatment during a particular time period. Detailed records of their treatments were kept and a follow-up was carried out approximately one year after treatment had been terminated.

There were ten females and two males. Their ages ranged from 17 to 68 years, with all except one being below 45 years of age.

The treatment programme followed the basic guidelines as described in Appendix A.

Specific treatments were based on the concepts of Maitland, Edwards, Janda, Elvey, Butler, Knott and Voss, Travell and Simons, Rocabado. Specific treatments were based on the concepts of Maitland, Edwards, Janda, Elvey, Butler, Knott and Voss, Travell and Simons, Rocabado.

RESULTS

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responded immediately to postural advice from a chiropractor after sitting with his head in an awkward position for hours. This local pain and stiffness. He was treated by a chiropractor months after termination of physiotherapy but then developed a local pain and stiffness. (One of these had a fracture of the C7 vertebral body). These results were absolutely fine since termination of treatment. (One of these had suffered a fracture of the C7 vertebral body). These results were summarised in Table II.

DISCUSSION

An analysis of this small sample of Whiplash Injury patients supports the commonly held views that these patients differ greatly in their clinical presentation, in the amount of treatment required and the length of time to recovery. Patients also arrive for physiotherapy treatment at very varying times after the date of the MVA ie., at differing points in the stages of healing.

These differences make it impossible to lay down firm rules for treatment, such as for how long a soft collar should be worn or when to start working into resistance. However, based on the studies of Twomey and Taylor, Osti et al and Jonsson et al, a treatment regime was planned and has been in use by the author for some time. The 12 patients who were included in this study were all treated according to these guidelines, viz.:
1. There should be a balance between rest and immobilisation on the one hand and a carefully graded movement programme on the other.
2. Any aggressive treatment including manipulation Should be avoided at all stages.
3. All elements of the neuro-muscular-articular systems should be considered in the programme.

The study by McGonigle and Matley states that it may take up to 6-12 months for healing tissue to attain full strength and this supports the conservative approach which had been followed in these 12 cases.

In this study the follow-up of the 12 patients, approximately one year after termination of physiotherapy treatment, indicated good results in the majority of cases. (see Table I).

Both patients from the Minimal classification, two from the Mild group and two from the Moderate/Severe group had been absolutely fine since termination of treatment. (One of these had suffered a fracture of the C7 vertebral body). These results were classed as good.

One patient from the Moderate/Severe classification had been symptom free for six months, then developed a local ache one day after sitting with his head in an awkward position for hours. This responded immediately to postural advice from a chiropractor and did not recur and was thus considered to be a good result. Another patient from this category was symptom free except after a very long day’s drive, when she would develop mild local pain. Her occupation involves a lot of driving and as she had a history of two MVA’s, the second just as she was recovering from the first, and as she runs, cycles and does a great deal of driving, this was also considered to be a good result.

One patient in the Mild group was symptom free for four months after termination of physiotherapy but then developed a local pain and stiffness. He was treated by a chiropractor who

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<th>TABLE I: SUMMARY OF 12 WHIPLASH PATIENTS</th>
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<th>TABLE II: RESULTS OF FOLLOW-UP</th>
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manipulated his neck repeatedly, with transient relief only. This was considered a poor result, largely from the point of view that the patient had not adequately understood the potentially serious nature of his injury and the need for non-aggressive management. Although this had been explained to him, it may have been advisable to contact the patient at intervals to ensure that healing was continuing as it should.

The three patients from the Severe classification had not recovered completely by the follow-up. The patient who had fractured the odontoid peg of the C2 vertebra and had spent two months in skull traction and two months in a firm brace did not regain full range of upper cervical rotation. In all other respects she was symptom free and leads a full life including exercise classes and swimming. The 68 year old patient with a fracture-dislocation of the C6/7 vertebrae with spinal cord involvement had undergone spinal fusion and had residual weakness of the intrinsic muscles of the left hand and some cervico-thoracic junction area stiffness for which she receives maintenance physiotherapy. However, she is functional, does pool exercise and swimming and looks after two grandchildren. The 17 year old patient whose axillary nerve was damaged in the MVA is still awaiting recovery of this nerve or possible nerve grafting. Her original neck and headache symptoms are fully recovered but she receives maintenance physiotherapy to prevent shoulder problems because of the non-functioning deltoid muscle. These three results were considered to be acceptable in view of the serious nature of the original injuries.

It would thus appear that this study supports the rationale suggested by the literature (2,3,4,5) i.e., that a conservative approach to the whiplash syndrome, where the extent of injuries is never certain, is the appropriate one.

CONCLUSION

Patient with whiplash injuries present a challenge to physiotherapists. In order to treat them with the best possible chance of good result, the following points should be borne in mind:

1. There must be a balance between immobility and support, and a carefully graded movement programme.
2. All structures/systems which may be damaged must be considered.
3. The stages of healing must be considered. In view of the length of time to full strength of the new collagen, it would seem advisable to check on the patient at intervals for up to a year in order to ensure that all is progressing as it should and to take appropriate steps should problems arise.
4. There is not place for aggressive treatment, especially manipulation, in the early stages, and perhaps not for a year or more as this may increase the size of any existing rim lesions and hasten discogenic degeneration. More research is needed in this respect.
5. Patients should be educated as to the possible extent of their injuries and the length of time until healing is complete. This should include advice on the avoidance of situations which may jeopardise optimal recovery such as contact sports or any aggressive treatment including manipulation of the cervical spine.

REFERENCES