

# PROLOTHERAPY: A SURVEY

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## INTRODUCTION

The incidence of ligament sprains, back injuries and whiplash injuries has increased in modern times<sup>1</sup>. The cost in human suffering, disability and in economic loss has also increased in the last 40 years in spite of advances in diagnosis and standard therapy<sup>2</sup>. Though manual medicine has been in use for a century, independent objective confirmations of benefit from it have only recently become available.

The use of sclerotherapy injection techniques in injured ligaments has been in use since 1937<sup>3</sup>. This therapy gained wider exposure in the 1950s with the publication of the first text on prolotherapy<sup>4</sup> as it came to be named, and has been the subject of clinical experimentation with modern methodology in the last decade<sup>5-8</sup>. Long-term benefit has been claimed on the basis of two retrospective surveys from individual practitioners' practices<sup>9,10</sup> and a modern textbook emphasising the use of prolotherapy was published in 1991<sup>11</sup>.

The present report is based on a postal survey of practitioners. It sets out to summarise the cumulative experience available.

## MATERIALS AND METHODS

Medical and osteopathic practitioners are thought to associate with national and professional organisations which reflect their style of practice and professional interests. There does not exist a registry of practitioners using prolotherapy. For the purpose of this survey, the assumption was made that by contacting the members of the American Association of Orthopaedic Medicine and the members of the American Osteopathic Sclerotherapy Society, a reasonable sample of practitioners using prolotherapy will be found. On the basis of the cumulative membership of these organisations, a questionnaire was mailed to 447 practitioners. They were asked to respond whether they used prolotherapy and, if so, answer the following questions:

- 1 An estimate of the number of patients treated in the whole of the practitioner's career with prolotherapy.
- 2 The number of patients treated for the low back, the number of patients treated for other parts of the paraspinal ligaments, the number of patients treated for peripheral joints.
- 3 Practitioners were asked to estimate what portion of their practice was made up of prolotherapy.
- 4 The number of years these techniques were used.
- 5 The use of various proliferant solutions was surveyed.
- 6 The use of local anaesthetics was surveyed.
- 7 The practitioners were asked in what proportion of their practice manipulation was used in conjunction with prolotherapy.
- 8 In what proportion manipulation was used without proliferant therapy.
- 9 In what proportion prolotherapy was used alone.
- 10 Reports on complications were solicited. Complications were grouped into minor complications

and major complications; pneumothoraces were enumerated separately.

Six months were allowed to pass before this summary was made, allowing adequate time for responses. The offices of practitioners who were thought to use prolotherapy and who had failed to return the questionnaire were contacted by telephone once a month before the survey results were summarised for this paper.

## RESULTS

One hundred and twenty responses were obtained to 449 survey questionnaires mailed (two practitioners who use prolotherapy were identified after the questionnaire was mailed originally and queried later). Of these, 95 respondents reported the use of proliferant injections. Two respondents were from Europe, the remainder were from North America. The cumulative total of patients treated was 494,845. Of these, 343,897 were treated for the low back, 98,430 for non-low back areas of the spine, and 26.85% of the patients also had peripheral joint treatments. Respondents varied extremely from 100% to 0.1% to the question what proportion of their practice was made up of prolotherapy. The average response amongst the 95 practitioners using this treatment was 27.89%. The practitioner with the longest experience reported 51 years, and the cumulative years of doctor experience amounted to 1,092. Of the 95 users, 82 reported regular use of glucose which was by far the most popular agent. Most respondents reported using combinations of glucose, glycerin and phenol. Forty-seven responders used sodium morrhuate in varying amounts. There were 9 practitioners who still recalled experience with Sylnasol and zinc sulphate (agents which are no longer in use). Fifteen responders had experience with PQU, 12 with pumice and 11 reported the use of other agents. Lidocaine was the local anaesthetic used most frequently. Procaine and Marcaine were used much less.

The cumulative uses of manipulation with prolotherapy amounted to 52.63%, manipulation without prolotherapy to 41.20%, and the use of proliferant alone (in applicable cases) was 33.77%.

## COMPLICATIONS

Sixty-six minor complications were reported. Many responders commented that local pain occurred in many of the treated patients. This is so usual in the use of prolotherapy, that for the purpose of the survey local pain from injection was discounted. There were 29 pneumothoraces. Two responders reported the need for chest tubes. No other complications from the pneumothoraces were reported. There were 24 reports of allergic reactions of varying kinds, none serious. There were 14 reports of major complications. For the purpose of this survey, a major complication was considered to exist if the patient required hospitalisation (this included the two cases of pneumothorax with chest tube), if the patient had transient or permanent nerve damage. No deaths or major paralyses were reported.

Many of the responders to the questionnaire wrote unsolicited comments on the benefit of this technique and recounted experiences of personal frustration from its limited acceptance.

## CONCLUSION

Prolotherapy has been used consistently by a minority of practitioners in North America since the 1950s with substantial benefit. The risk/benefit analysis indicates a low complication rate.

## ACKNOWLEDGEMENT

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## BOOK REVIEW

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### Repetitive Strain Injury: the keyboard disease

Edward Huskisson

Charterhouse Health Series 1992

£10.00

This is a nice little softback of one hundred pages which puts the problem of RSI into perspective. It is primarily aimed at the public but provides a useful introduction to the problem for any interested practitioner or therapist.

It is written in a lighthearted humorous style with cartoon illustrations and draws heavily from the Australian experience during the decade of the '80s. The author describes how the phenomenon first became identified with widespread keyboard usage and, through the inappropriate application of the medical 'injury model', became a fashionable disease of almost epidemic proportions. Under the derision of the media who dubbed it 'Kangaroo Paw' and a journalist who faked it and received compensation, RSI eventually became socially unacceptable, but not before it cost Australian industry half a billion dollars. Huskisson refers to the problem as a 'catastrophe' which overstates the case since he points out that a Japanese study on cash register operatives found a recovery rate of 36% after three years increasing to 94% by 10 years.

He delineates very clearly the rules for keyboard workers to avoid developing RSI and emphasises exercises and fitness for the job which ergonomists (in

my experience) seem to neglect. He informs the would-be sufferer on the 'ins and outs' of making a claim but points out that it is invariably a long and fruitless battle against employers and in the courts with only small sums ever being awarded.

He states clearly that RSI is a functional disorder of muscles and the nervous system with no consistent structural abnormality being demonstrated. It is not synonymous with tenosynovitis, tennis elbow or shoulder-hand syndrome.

The only treatment regime that has been shown to be effective is a cognitive behavioural programme either individually or in a group. The recent study by Helliwell et al from Leeds found that pain was related to the tasks with the highest estimated daily loads but the level of symptomatology reported was strongly correlated with depression, anxiety scores and higher scores on the Bradford Somatic Inventory. This latter study supports his notion and other work that there is a strong interaction between physical and psychological factors.

He emphasises the value of prevention through good ergonomic design of the work station, rotation of office tasks, frequent breaks, and not to type more than 50-75% of the day.

My main criticism is that he is rather dismissive about the benefit of any physical therapy due to the lack of evidence. However, having just attended the PMRF Symposium on this very subject in which examples and case histories were presented, it would seem that a comprehensive musculoskeletal assessment with particular attention to adverse neural tension factors must play a significant role in management.

In all, an excellent book for any worker in the field and one with which every personnel manager should be fully acquainted.

**Dr J A Tanner, Chichester**