

Clinical study

Outcome following anterior cervical discectomy in compensation patients

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Summary This is a retrospective study aimed to analyse the clinical outcomes of patients following anterior cervical decompression and fusion for radiculopathy in worker's compensation, third party and non-compensable group. The outcome of 224 cases operated between 1991 to 1998 were analysed. Only patients with radiculopathy due to a cervical disc protrusion and spondylosis were included. There were 140 non-compensable patients, 58 worker's compensation and 26 third party. There was no statistical difference in radiological fusion between the three groups ($P=0.46$). The worker's compensation and third party claimant groups, had an 'excellent' outcome at 65% and 69% respectively, compared to the non-compensation group at 79% ($P=0.042$). Rates of poor outcome were high in the worker's compensation group (9%) compared with third party (4%) and the non-compensable group (5%). Financial incentives seem to significantly influence the outcome of cervical disc surgery in our patient population. © 2001 Harcourt Publishers Ltd

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INTRODUCTION

Problems of the cervical and lumbar spine are gaining more concern in the insurance and industrial sectors as they consume resources in the form of monetary compensation for morbidity and lost work days. In spite of advancement in surgical techniques, high morbidity rates persist in spinal surgery. Disability is caused by multiple factors. It is hard to evaluate by present diagnostic methods the degree of disability, which results in the misuse of the compensation system for personal gain. Lumbar disc surgery is performed widely and the compensation factor has been proven beyond doubt as a reason for poor outcome. Compensation in cervical disc surgery has not been studied comprehensively. We have attempted to study the outcomes in various groups of patients and compare the results to evaluate the statistical significance of the compensation factor.

MATERIAL AND METHODS

This study includes patients who underwent anterior cervical decompression and fusion (ACDF) for radiculopathy secondary to disc disease from 1991 to 1998 by the senior author (NKC). Two hundred and twenty four patients whose records were traceable were included in this study, out of which 130 were non-compensable (NC), 58 worker's compensation (WC) and 26 third party (TP). The mean age of the NC group was 49, the WC 46 and TP group at 44 years of age. The male to female ratio was 106:118 in general.

The clinical outcomes were classified following the criteria by Odom.¹ Excellent results were asymptomatic and had no impairment of their daily living and occupations, good with intermittent discomfort but without interference with occupational activities, fair with subjective improvement but still significant limitations of physical activities and poor with no improvement or deterioration.

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RESULTS

Solid fusion was assessed radiologically over 12 months duration. The mean rate of fusion for all patients in this study group was 97%. The TP group had the highest rate of fusion at 100% (26/26), followed by the WC group at 96% (55/58). The NC group had the lowest fusion rate at 95% (133/140). In the NC group ($n=140$), 79% had an excellent outcome, 11% good, 5% fair and 5% poor; the WC group ($n=58$) had 65% excellent outcome, 17% good, 9% fair and 9% poor and the TP group ($n=26$), 69% had an excellent outcome, 15% good, 12% fair and 4% poor (Fig. 1).

DISCUSSION

Cervical radiculopathy needs surgical intervention when the conservative methods fail or when there is significant root compression. The surgical procedures initially aimed at a posterior decompression in the form of foraminotomy or rhizolysis. Henderson et al reviewed the literature and felt that excellent results for cervical radicular symptoms can be obtained using either a posterior or anterior approach.² He found a significant difference in complication rates in the anterior versus posterior approach. He noted a very low complication rate in all papers that discussed the posterior approach. In his own series of 846 patients operated over 3 decades, 96% of patients had relief of arm pain

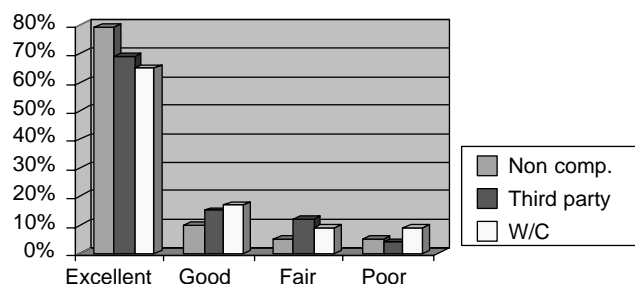


Fig. 1 Clinical outcome following surgery.

and paraesthesiae and 98% improvement of preoperative motor deficit with 1.5% minor complications and 3% of cases requiring a second surgery for recurrence. He noticed a high percentage of complication rates in the results of anterior cervical decompression for radiculopathy. With more surgeons opting for the anterior approach, it has become a standard procedure for cervical disc pathology, either a simple discectomy with or without fusion or fusion with plating.

In 1956 Gotten turned his attention towards litigation in determining the prognosis following whiplash injury and also found that once the claims had been settled, many patients improved appreciably.³ In 1972 DePalma studied the natural course of severe disc degeneration among 388 patients of whom 107 refused surgery;⁴ they were taken as the control group. Among 107 patients, 68 patients were available for study and 30 of them were litigants and 38 non-litigants. The outcome among them was compared. The satisfactory results in non-litigants and litigants were 60.5% and 26.7%, respectively. This demonstrated a clear poor outcome in litigants. He also studied the outcomes in anterior cervical decompression but could not find any difference among litigants and non-litigants. Gore reviewed 146 patients and could not find any effect of litigation over the outcomes.⁵ Cauthen made a study of 43 previous reports; excellent and good results were rated as a success and fair to poor as failures. He noted the overall success rate varying from 84 to 96% in ACDF. Two of the 43 reports studied the role of secondary gain in clinical outcome. In one of the reports 89% success was noted in the secondary gain group and in the second study it was 66% success. The reports had patients numbering 9 and 15 respectively.⁶ Maurice-Williams et al. found a good result between 66 and 92% in various reports. His own series had 93% good results in radiculopathy and 83% in myelopathy with an overall good result of 88%.⁷ We could find only a few reports in the literature where an attempt to discuss the results in compensable and non-compensable groups separately. Hendersen et al. for cervical radiculopathy treated by a posterior approach, found no statistical difference in the clinical outcomes among private versus compensation versus liability patients.² Kaptin et al. studied the role of compensation in clinical outcome in a selected group (military/service personnel) and found no significant effect in cervical disc surgery but noted a significant difference in results in lumbar disc surgery.⁸

Our study has shown a statistically significant difference in outcome among NC versus WC versus TP with favourable results being 90%, 82% and 84%, respectively. The NC group had the lowest rate of fusion although it had the highest excellent outcomes.

CONCLUSIONS

Although there is no statistical difference in radiological fusion rates between the three groups ($P > 0.05$), the rate of excellent outcome is statistically lower in the WC and TP groups than the NC group ($P = 0.042$). Poor outcome rate is higher in the WC group than the other two groups. NC patients had a favourable result in our study group, with 79% having an excellent outcome. Our analysis suggests that financial compensation has a role in the poor outcome of WC patients and a reduction in excellent results in both the WC and TP patients, despite higher fusion rates in these two groups. The authors believe that in this study population, financial incentives seem to influence outcome of cervical discectomy and fusion.

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