Effect of Workers' Compensation on Outcome of Rotator Cuff Repair

Many studies have shown that patients hurt on-the-job and covered under Workers' Compensation (WC) have worse results after rotator cuff repair compared to those who do not have WC claims. The reasons for this difference still aren't clear.

In this study, researchers test individual factors to see if they could find a specific cause for the worse results in WC patients. The research method they used was a multivariable analysis. This statistical analysis helps show the effect of each factor studied while controlling for other factors that could confuse the results.

They did this by just studying patients treated by one single surgeon. This approach helps eliminate differences from one surgeon to another. Each patient had a full-thickness tear with symptoms lasting for more than three months despite conservative care. Rotator cuff repair was done using one of three surgical techniques (open repair, mini-open repair, arthroscopic repair). Patients were divided into two groups. The first group was Workers' Compensation patients. The other group was non-Workers' Compensation patients.

There were no noticeable differences between the two groups based on repair technique. Not everyone had the same exact surgery. Some patients had the rotator cuff repair plus adjunct (additional) repairs. Some of these surgeries included subacromial decompression (takes pressure off the rotator cuff), distal clavicular resection (removes end of collar bone for arthritis), and biceps tenodesis (repair torn biceps tendon). The authors reported no differences between the two groups as a result of these extra procedures.

Several other measures were taken before and after surgery to help identify factors that could explain the differences in results between WC patients and non-WC patients. Each patient was examined by the surgeon and gave a complete medical history. They also completed a series of questionnaires to assess pain level, function, expectations, general health, and psychosocial status.

The visual analog scale (VAS) was used for pain, disability, and quality of life. For each of these variables, the patient gives a rating from zero to 10. Zero means no pain, no disability, or no effect on health or happiness. Ten refers to severe pain, disability/unable to use the arm, and very bad problem.

Expectations of treatment were also measured using the Musculoskeletal Outcomes Data Evaluation and Management System (MODEMS). This survey asks patients what they expect in terms of symptom relief, comfort, sleep, activities and exercise, function or disability. Expectations are scored from one to five. One is the lowest level of expectations and five is the highest level.

The Simple Shoulder Test (SST) and the Disabilities of the Arm, Shoulder, and Hand (DASH) are two well-known tests of specific limb function. Each patient completed these two tests as well. They were also given the Short Form-36 (SF-36), which is a measure of physical function, pain, general health, and social function. The SF-36 helps identify physical, emotional, social, and mental factors that might contribute to worse outcomes.

Besides completing these formal tests, patients were also asked about their use of tobacco and level of activity (retired, sedentary, light, strenuous). Any other health problems were recorded.

Everyone followed the same postoperative rehab program supervised by a Physical Therapist. There were some differences in the exercises and timing of activities based on whether the patient had a mini-open, open, or arthroscopic repair. For example, passive motion was more limited during the first four weeks for patients who had an arthroscopic repair versus an open repair.

After all the data was collected and carefully analyzed, the Workers' Compensation group did have worse performance and worse improvement in all areas (compared to the non-WC group). When all other things are equal, the main difference...
whether or not the patient had a WC claim. To put this in research terms, we would say that Workers’ Compensation status is an independent predictor of worse outcomes.

Sex, duration of symptoms, size of the rotator cuff tear, and number of other health problems did not seem to make a difference between the two groups. Everyone in both groups improved from before surgery to after surgery. But the general trend was for WC patients to have lower function on the SST and DASH tests. Level of pain and quality of life were worse for the WC patients. And they showed overall less improvement.

The WC group was younger, had lower educational levels, and fewer were married compared to the non WC group. But the multivariable analysis controlled for these differences and showed they had no effect on the results. That left the authors wondering what is it about being a WC claim patient that makes the difference?

They asked if it is the process of a WC claim that affects the outcome? Or is it something about the individual who files a claim that is the cause of a worse result? The WC group did have lower expectations but it wasn’t clear if that was the important factor. Maybe the lower expectations were related to the lower educational level in the WC group.

There is always the possibility that secondary gain is the underlying factor. Secondary gain refers to the patient's hope of receiving a financial reward for his or her injury. This study did not assess that factor directly. Measuring results before and after the claim has been settled may help shed some light on the effect of secondary gain.

For now, the authors can only conclude that a WC claim had a negative effect on the short-term results of a rotator cuff repair. And they point out that there are other variables they didn't test for. Further studies are needed to assess the effect of anatomic factors (tendon quality, repair strength). Long-term results of this study (five to 10 years later) may show that when it’s all said and done, outcomes are equal.