

## Chronified Lower Back Pain in Whiplash Injuries: What can the Medical Expert Expect?

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### Abstract

Symptoms to the lower back after low velocity road traffic accident are common. Symptoms generally occur together with neck pain after an acceleration/deceleration trauma. Both can become chronic and problematic to explain in a medicolegal setting. We reviewed clients from our medicolegal clinic that suffered from back pain after more than 12 months following their accident. The clients' past medical history and available images suggest a high incidence of preexisting or constitutional conditions and psychological symptoms. Without evidence of a relevant substantial damage, data suggest that in the ongoing litigation process further investigations, e.g. MRI scans, are not required but focuses on the need for a proper psychological assessment.

**Keywords:** Whiplash; Whiplash Injury; Road Traffic Accident; Lower Back Pain; Chronified Lower Back Pain; Litigation

### Introduction

"Whiplash" injuries are the most common reasons for claiming compensation after motor vehicle accidents. This involves the neck and the lower back. Usually and without evidence of a structural damage, it can be expected that symptoms would settle with a high likelihood within 12 months after trauma. However, a minority of claiming clients continue to suffer beyond this point. A retrospective review of our clients was conducted to evaluate the past medical history and the possible findings whenever images were available.

### Methods

In the surrounding of a medicolegal setting, 743 clients were seen for the purpose of a medicolegal report after road traffic accidents. Among those, 101 patients with persisting symptoms in the lower back were identified and included in this review. They fulfilled criteria of a previous trauma with ongoing pain symptoms beyond 12 months after the initial accident.

The physical examination focused on the range of movement, tenderness over the paravertebral muscles, neurological deficits, and pain on examination. A review of the client's medical records took place focusing on their past medical history and whenever possible, their images. The examination was conducted by the same consultant.

### Results

101 clients presented with ongoing lower back pain. They were examined 17 months (12 - 39 months) after the accident under investigation. The majority of clients was female (63:38) with an average age of 44 years (14 to 87 years). 20 of the clients were younger than 30 years old (14 to 27), 68 between 30 and 59 and 23 older than 60 years of age (60 to 87).

68/101 (68%) clients reported or were found to have a history of back pain. In 11 of them (11/68) symptoms stemmed from a previous injury or a road traffic accident with ongoing symptoms. 33 Clients had no history of back pain prior to the accident.

Following the accident, symptoms occurred within 1, 3 days ranging from an immediate onset to a delayed presentation after a maximum of 7 days. 85 reported immediate symptoms, 10 within 2 days, 4 Clients within 3 days and one Client within 7 days.

In 51 clients, results from X-ray, CT or MRI scans were available. 46/51 had positive findings of a pre-dating condition. The most common diagnosis was that of degenerative changes in the lumbar spine. 22 clients had evidence of disc protrusions or prolapse, 13 multilevel degenerations, 4 facet hypertrophy, 3 spinal canal stenosis. In 5 clients with images, results were entirely normal.

9 clients without available images had a documented history of degenerative disc disease prior to the accident affecting the levels of L2 to S1. As such, 55/101 clients suffered from a documented condition prior to their appointment. The average age in the group of clients with a history of back pain was 48 years (16 to 87 years). The majority (33/46) was aged 30 to 59 years and 6 respectively 7 were younger than 30 years and older than 60 years.

In 61 clients, symptoms were associated with neck pain that resolved themselves in 22 clients within 8 months after the accident. None of the clients presented with neurological symptoms. Only one Client complained of radiculopathy of C8 nerve root, which settled after 3 months.

65 clients expressed psychological symptoms in the form of fears and anxiety (54/65), depression (2/65), symptoms of PTSD (3/65) and somatization (6/65). 3 clients had undergone counselling or CBT sessions for their symptoms before their appointment. 42 clients in this group had a history of back pain. 15 were diagnosed to have a trauma related cause of their physical symptoms, 6 with features of somatization, 2 with a postural cause.

32 had no psychological concerns. In this group, 18 clients had a history of back pain before the accident. 9 were diagnosed to have a trauma related source of pain, 5 a more postural related issue.

95 clients were referred to physiotherapy. They underwent on average 11,2 treatment sessions (2 to 35) that were regarded as helpful in 49 clients. In general, recommendations after treatment were given for "stretching exercises". 5 received advice for sports or pilates; one client was referred to extended rehabilitation.

### Discussion

The review of our data suggests that a claiming client with ongoing lower back pain symptoms after a low velocity car accident has a high prevalence of a documented pre-dating condition. In the entire study group, no relevant injury could be identified. Most commonly, findings of available data refer to degenerative changes of the discs and the spine alike. This applies to two third of our clients and involves all age groups, most commonly the client at the age of 30 to 60. The prevalence is 2-fold higher than in the comparable age group without accident.

Many factors have been discussed in order to explain longevity and chronification of symptoms. The fact that "Whiplash associated disorders" are more frequent in a medicolegal setting than the clinical environment and the fact that there is little clinical or radiological evidence of a true pathology raises concern that psychosocial factors may be as relevant as the physical aspect in determining outcome. However, there is a long list of contributing factors that were found to be significantly associated with poor outcome. Among those are pre-injury back pain, female gender, higher age, high frequency of GP attendance before and after the accident, evidence of pre-injury attendances to the GP for depressive or anxiety symptoms, front position in the vehicle and pain radiating away from the neck after injury [1].

An approach favors biosocial and psychological factors. Two thirds of our client developed psychological symptoms after the accident. This is entirely in keeping with the literature that confirms unresolved psychological symptoms as trigger of chronification in patients after “whiplash injuries”.

As a result, the orthopaedic expert needs to weigh the possibility of a physical injury. In a previous review of our clients in a medicolegal setting, it was found that less than 0,8% of them sustain substantive injuries, e.g. fractures of the spine. However, the scenario for these injuries involves high-velocity accidents with roll-over or side-impact components and is entirely different.

As such and without evidence of a structural damage, it would be favorable to consider contributing factors. With reference to the literature, the most common factors would be psychological implications. It is surprising that despite the high number of clients with psychological sequelae only 3 out of 65 clients had a psychological assessment. The relevance of psychological symptoms appears to remain underestimated. Hickling [2] found a 50% prevalence rate for PTSD in their group of RTA survivors. In another study by this research group [3], physical injury was associated with the development of PTSD (and subsyndromal PTSD). Finally, in a sample of litigating RTA survivors with chronic pain and posttraumatic stress symptoms, Duckworth [4] found that high posttraumatic stress symptoms were associated with physical impairment, maladaptive pain coping strategies and psychological distress. They were usually treated more often with antidepressants, other medications or psychological management than participants experiencing low posttraumatic stress symptoms.

The relevance of psychological implications is that individuals may have difficulties distinguishing between pain complaints and PTSD symptoms as problems may have originated from the same event. Most patients were inclined to accept their pain symptoms and PTSD as a “common lump” caused by the RTA. It is therefore important for therapy to help the RTA survivor to differentiate between pain and PTSD, particularly since these two types of problems respond to different interventions. Additionally, there appears to be little generalisation of treatment effects between these two problem areas [5,6].

It is estimated that PTSD occurs in at least 25% of traffic accident victims who sustain physical injuries. Their number may be higher in patients with chronic whiplash complaints [7]. The significance of PTSD symptoms lies within their impact on severity of depressive symptoms, whereas depressive symptoms have a direct influence on pain intensity and an indirect impact on pain intensity by way of their effect on disability.

Furthermore, PTSD and other psychological implications [8-10] together with poor health have been identified as variables of resulting in chronic widespread pain (CWP). The individual’s symptoms are closely connected to a traumatic trigger, in particular RTAs [11]. It was found that abnormalities in the hypothalamic-pituitary- adrenal (HPA) stress-response system act as an effect moderator between HPA function and the onset of chronic widespread pain (CWP). It can add to those patients that are psychologically at-risk subjects [12].

Further risk factors for CWP are high levels of illness behaviour and somatic symptoms [13]. It was also reported that high levels of psychological distress observed in subjects with CWP were explained by factors associated with CWP, including somatic symptoms and fatigue, rather than the pain per se [14].

Mechanisms that may be important in explaining the poor quality of life in subjects with CWP include the fear-avoidance model developed by Vlaeyen and Linton [15] as an explanation for chronic low back pain. It proposes that whenever pain is perceived as threat, symptoms tend to be catastrophised. This results in a higher likelihood of disability and depression. There is also evidence of a “disuse syndrome” [16], where long-term avoidance of daily activities can result in increased physiological and psychological negative effects. Patients with chronic pain have been shown to have greater catastrophic coping strategies than those with acute pain [17]. It is likely that this “abnormal” coping strategy in subjects who are psychologically predisposed to CWP will also put them at a higher risk of having poor quality of life.

Depression has been shown to be correlated with health related quality of life in fibromyalgia patients [18]. It is possible that among subjects with new onset of CWP, those with premorbid psychosocial symptoms may be more likely to report poor quality of life.

Besides, accidents that coincide with psychological disorders have a potential to develop somatiforme symptoms. Patients can convert their mental state into bodily symptoms. The term is often used descriptively for patients with physical complaints but no recognizable organic basis [19].

In a medico legal setting, it is imperative for the specialist to exclude an organic cause for the client's symptoms. In clients with symptoms after more than 12 months, no definable cause could be identified. The high incidence of persisting psychological symptoms should necessitate a psychological referral for further differentiation. PTSD and other psychological symptoms directly contribute to the level of depression, pain and disability exhibited by chronic pain patients and highlights the need to consider directed and primary treatment of PTSD in pain rehabilitation programs [20].

However, it is the experience of the author that it is almost impossible to get an opinion from either a pain psychologist or a psychologist, which would be able to explain the relevance of the psychological trauma in relation to the extended pain suffering, e.g. somatisation, magnification or an adjustment disorder.

### Conclusion

Clients in a medicolegal setting that have been involved in an RTA hardly have evidence of an acute injury. The most common findings relate to preexisting degenerative conditions and psychological symptoms. The relevance of psychological issues lies in the trigger for chronification of physical symptoms and the development of negative coping strategies. As such, early assessment for psychological sequelae would help to provide a better outcome after RTAs.

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