



EDITORIAL ARTICLE

Medicolegal issues in whiplash injury[☆]



Aspectos periciales en el síndrome del latigazo cervical

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Whiplash syndrome (WS) is a cervical spine injury first reported by Crowe in 1928.¹ The Quebec Task Force on Whiplash-Associated Disorders defines it as a clinical condition that occurs following an acceleration-deceleration mechanism of energy transferred to the neck, which may be secondary to motor vehicle collisions but can also occur during diving or other mishaps.² This injury is common, although its incidence varies widely by study and geographic area.³ In the United States, it has been calculated that 20–52% of those injured in a road traffic accident may suffer from WS.⁴ From this it may be deduced that the annual incidence of WS is around 3.8 per 1000 inhabitants per year.⁵ In other words, in the United States, it is an estimated that there are more than 1,000,000 new cases per year.⁶ In 2014, 34% of injuries in road traffic accidents assessed by forensic physicians in Barcelona were due to WS.

This very common and complex syndrome creates clinical uncertainty in those who attempt to explain its underlying injury, apply a treatment and make a prognosis, since it is easy to diagnose but difficult to objectify. In most cases, complementary examinations are negative or non-specific, and sometimes there is no effective treatment.^{7,8} From a

medical and legal standpoint, the clinician encounters a patient who has already been diagnosed, sometimes with no objective injury data, with normal or non-specific complementary examinations in most cases and with a highly variable clinical course. It remains difficult to explain why an appreciable percentage of patients follow a chronic clinical course.^{9,10} Psychological factors are involved in chronic cases; non-medical factors undoubtedly also play a role and may increase clinical symptoms.^{11–13}

Regarding the clinical course of WS, it must be said that while all authors have agreed that this is a benign process that resolves in no more than 30–60 days in most cases, several studies have demonstrated that approximately a quarter of cases become chronic and present chronic pain throughout a clinical course lasting longer than six months.¹⁴ However, although multiple studies have been conducted, the reasons why cervical spine pain persists and the condition becomes chronic are unclear and require further research.^{7,14} It is currently believed that symptoms persist due to unresolved organic injuries, worsening of a prior state or psychosocial factors, or are feigned, perhaps in pursuit of financial compensation. The presence of several of these associated factors has also been postulated.^{7,14,15}

Various studies have demonstrated that several factors worsen the prognosis for patients with WS. These are advanced age, female sex, turning or tilting the head at the time of impact, country or region where WS occurs, delay in starting treatment, initial location of pain, severity of cervical spine pain and headaches, initial radicular syndrome,

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osteoarthritis prior to trauma, involvement of lawyers and type of work prior to WS.^{7,16}

From an expert standpoint, the clinician must currently perform his or her assessment in compliance with Law 35/2015, of 22 September, Article 135 of which compiles guidelines for expert assessment of minor trauma to the spine.^{17,18} This article specifies (135.1): *Minor cervical spine traumas diagnosed based on manifestation by the injured person of the presence of pain and not subject to verification using complementary medical tests are compensated as temporary injuries, provided that the nature of the injurious act is capable of causing damage in accordance with the following generic criteria for causality: (a) Exclusion, (b) Chronology, (c) Topography and (d) Severity.* This is understood to refer to patients with milder WS — Quebec classification Grade 1 (2) — which normally resolves with a healing time of less than one month.¹⁹ The classic criteria for causality are assessed as follows. Under the exclusion criterion, there must be no other explanation for the condition. Under the chronology criterion, symptoms must appear within a period of time for which a medical explanation may be provided — in other words, symptoms must manifest within the 72 h following the accident or the injured person must receive medical care within this period of time. Under the topography criterion, there must be a relationship between the area affected by the accident and the injury suffered. Finally, under the severity criterion, the injury suffered must be consistent with the mechanism of production.

To make this assessment, the clinician must have access to complete clinical information for the injured person and the police report on the circumstances of the accident. In some cases, the clinician must also have access to a technical report on the biomechanics of the accident, prepared by an engineer. These reports must be assessed with caution and their methodology and margins of error must be reviewed. The clinician must remember that the damage to the vehicle is not necessarily consistent with the injury to the injured person(s) and consider the current state of scientific knowledge on the subject.^{20–24}

Article 135.2 of Law 35/2015 states: Sequelae deriving from minor cervical spine trauma are compensated only if a conclusive medical report confirms their presence following the period of temporary injury.¹⁷ This also represents a novel aspect of the new law, and implies that when one or more sequelae are believed to be present following WS, they will only be compensated if a medical report with scientific arguments clearly confirms their presence.²⁵ It is understood that this report may be prepared by a medical practitioner or medical expert.

In this issue of the *Revista Española de Medicina Legal*, Vivas Broseta et al. present a study on the usefulness of biomechanical testing in determining sequelae due to post-traumatic cervical spine pain.²⁶ A group of 51 patients with WS were studied using kinematic assessment of cervical spine movement, dynamometry of hand strength and posturography. More than half showed normal overall functioning, a fifth showed slightly abnormal functioning, 12% showed abnormal functioning and 8% did not cooperate. In most cases, the result of this complementary examination was useful for the expert assessment performed by

the forensic physicians who participated in the study, serving as an objective test of cervical spine mobility and, in particular, instances of exaggeration and feigning of symptoms.

Therefore, biomechanical testing may help to better objectify both the presence and the absence of sequelae, and may aid in confirming suspicions of feigning of symptoms, which for some authors are quite common in chronic cervical spine pain.²⁷

Finally, from an expert standpoint, in these cases it is advisable for the clinician to have access to complete information: the full medical history of the injured person; the police report of the accident; and the initial report of injuries, whose manifestations are assessed following the accident. The clinician should complement this information with the current medical history and initial clinical examination of the injured person, which must be as complete as possible to determine the grade of severity of WS according to the Quebec classification, which is an essential piece of information for making a medical and legal prognosis for WS.^{28,29} The clinician will then review and assess the complementary examinations performed and the clinician course of the patient, including his or her response to treatment, and finally perform a full physical examination at the time of the expert evaluation. With all these data, the clinician will be in a position to issue his or her expert report with objective scientific arguments.

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