SUMMARY

The same day as being involved in a traffic incident as a pedestrian hit by a car, a middle-aged woman accessed emergency medical care and was later discharged. After two days the patient returned to emergency with complaints of neck pain. X-rays were conducted was immobilized with a cervical collar. Since the pain persisted, she was examined a few days later by physiatry, where a limitation in the arc of motion of the neck was found and whiplash was considered a possibility.

This type of cases related to chronic posttraumatic pain are relatively common in clinical consultation and represent a great challenge for physicians, mainly in the forensic field, since there are often many symptoms and very few signs to identify the damage. Therefore, a forensic doctor must recur to the clinical history and carefully examine the mechanism of injury and the

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evolution of the clinical presentation, in addition to calling on other disciplines such as orthopedics, physiatry, psychiatry and pain medicine to issue a definitive concept.

**Keywords:** Whiplash; Clinical forensics; Traffic accident.

**INTRODUCTION**

Whiplash is caused by the acceleration-deceleration mechanism that transmits energy to the cervical spine (1,2,3). This generally occurs in traffic collisions, which causes forced flexion and extension of the spine and can also cause forced lateral movements of the head.

The frequency of injuries produced by whiplash after traffic accidents varies from country to country (and even within regions), and depends on many factors such as the number of vehicles per inhabitant, traffic safety laws and indemnification systems, among others. It is worth noting that increasing incidence of whiplash in the United States and Western Europe over the last 30 years, along with the high financial cost, reported at 3 billion pounds annually in the UK (1).

As for the type of damage, the Quebec classification (4), widely accepted in literature around the world, establishes the severity of symptoms in 4 grades:

- **Grade 0:** no symptoms in the neck or physical signs
- **Grade 1:** neck symptoms only (pain, stiffness or pain upon palpation with no physical signs)
- **Grade 2:** musculoskeletal signs are added
- **Grade 3:** neurological signs are added (reduction or absence of deep tendon reflexes, weakness and sensory deficit)
- **Grade 4:** neck symptoms and cervical fracture or dislocation

Other symptoms may be present such as dysphagia, tinnitus, temporomandibular joint symptoms, vertigo, lower back pain, dysphonia, headaches or vegetative symptoms.

**CLINICAL HISTORY**

A 45-year-old woman who was hit by a car when crossing the street was subsequently examined in the emergency room at a third-level clinic. She received analgesic care and was later released.

Two days later, the woman sought emergency treatment once again for severe neck pain. X-rays were conducted and the neck was immobilized with a cervical collar for 20 days. Since her injuries were caused by a traffic accident, a medical-legal evaluation was ordered.

Six days after the accident, the first medical-legal report was issued with findings of immobilization with the cervical collar and subgaleal hematoma in the occipital region. Pain in the right shoulder and left leg was also reported. Given these findings, a blunt causal mechanism was identified and provisional medical-legal incapacity was indicated for 20 days. 14 days later, a new medical evaluation was conducted in which the patient was prescribed a bone scan and management with physiotherapy.

In the second medical report, written a month after the first one, limited neck movement due to pain was observed, and it concluded in a new provisional medical-legal incapacity for 25 days. Another bone scan and neurosurgical evaluation were requested.

The following month, the patient was diagnosed with lower back pain and posttraumatic back pain, and the patient reported an improvement from the treatment (reduction especially in lower back pain, though cervicogenic pain persisted). With the cervical spine X-ray, in which no signs of fracture were observed, the bone scan revealed hypercaptation in the left sacroiliac joint.
and acromioclavicular joint, without hypercapta-
tion at the cervical or lumbar level. The patient
presented with symptoms of neck pain (possibly
due to whiplash) and posttraumatic lower back
pain, for which she was prescribed physical ther-
apy, analgesics and follow-up consultations the
following month.

The third medical-legal report was carried
out a month later. In it, evaluation from phys-
iatry was indicated with imaging studies, with
which definitive medical-legal incapacity was
found necessary.

20 days later, the patient was examined by
physiatry due to the persistence of cervicogenic
pain. The results of the cervical X-ray showed no
signs of fracture while the bone scan showed hy-
percapitation in the left sacroiliac joint, without
hypercapitation at the cervical or lumbar level.
A diagnosis was made of possible whiplash and
posttraumatic lower back pain, prescribing man-
agement with analgesics and physiotherapy.

A few days later, an MRI was conducted on
the patient and indicated slight chondritic chang-
es with bulging of the annular fibers between C3
and C6 and slight changes in slight facet arthrosis
in C5-C6 and C6-C7 without myopathy.

The fourth medical-legal report showed
limitation to the arc of cervical motion, reporting
limits to the patient’s daily activities.

**DISCUSSION AND CONCLUSIONS**

Whiplash presents a great challenge to
physicians at all levels since there is disparity
between the large symptomatology and the
few findings from clinical examinations that
can be be supported in the results of diagnos-
tic imaging. Therefore, it is necessary to take a
comprehensive approach with all the technical
and scientific tools available to objectify the complaints of the patient and make them
supportable in order to rule out the possibility
that the patient’s symptomatology is not due
to neuropsychiatric disorders or a desire for fi-
nancial compensation.

In this case, a few criteria for medical-legal
evaluation of whiplash were considered, as re-
ported by Sánchez et al. (5):

- Onset of symptoms in the first 72 hours.
- Presence of signs and symptoms described
  in medical literature.
- A mechanism of injury that can account
  for whiplash syndrome.
- A clinical history is very useful since it
  may eventually show the absence of pre-
  vious neck pain, requiring evaluation by
  specialists to demonstrate a significant in-
  crease that could affect quality of life.
- To determine the medical-legal ramifica-
  tions of the case, the presence of pain of a
  magnitude that obliges the patient to con-
  sult doctors frequently and receive treat-
  ment must be proven, with the concept of
  pain clinic being important.

After applying these criteria to the case at
hand, we found that the patient had an injury
that was not typical of whiplash (she was run
over by a car) though it does not rule out whip-
lash. Within 48 hours of the trauma, the patient
sought medical care based on the typical clinical
presentation described in medical literature: in-
tense cervical pain and limited cervical move-
ment. Though X-rays of the cervical column
and bone scans taken two months posterior to
the accident did not show anatomical damage,
this lack of findings from imaging is frequent
and also described in medical literature.

Three months later an MRI was conduc-
ted that showed slight osteoarthritic changes
and facet compromise, which can be associated
to the trauma suffered. The patient underwent
nine medical and medical-legal evaluations in a period of three months. The patient reported limitations to carrying out daily activities and the physician continued to find limitations in the cervical arcs of motion. There is no record in the clinical history gathered of a background of cervical pain from other causes.

From the forensic point of view, and taking into these elements of judgment, it was considered that the damage is worth a 25 days final forensic inability; in addition, as a medicolegal sequel, it presents a functional disorder of the musculoskeletal system, whose temporary or permanent character will be defined through the evaluations provided by the Pain Clinic, Physiatry and neurosurgery.

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REFERENCES