

**Delayed temporomandibular joint pain and dysfunction induced by
whiplash trauma: a controlled prospective study**

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FROM ABSTRACT

BACKGROUND:

The Quebec Task Force on Whiplash-Associated Disorders urged for controlled, prognostic studies of symptoms after whiplash trauma. The authors conducted a study that met the design requirements to enhance knowledge about short-term and long-term temporomandibular joint (TMJ) pain, dysfunction or both induced by whiplash trauma.

METHODS:

The authors studied 60 consecutive patients who had neck symptoms after whiplash trauma and were seen at a hospital emergency department. They followed up 59 subjects one full year later. At the inceptive examination and at follow-up, each subject completed a self-administered questionnaire, followed by a comprehensive interview. Fifty-three frequency-matched control subjects followed the same protocol concurrently.

RESULTS:

The incidence of new symptoms of TMJ pain, dysfunction or both between the inceptive examination and follow-up was five times higher in subjects (34 percent) than in control subjects (7 percent).

The frequency of TMJ pain increased significantly in female subjects, as did the frequency of TMJ symptoms that were reported to be the main complaint.

At the follow-up, 20 percent of all subjects reported that TMJ symptoms were their main complaint.

CONCLUSIONS:

Our results suggest that one in three people who are exposed to whiplash trauma is at risk of developing delayed TMJ symptoms that may require clinical management.

CLINICAL IMPLICATIONS:

Awareness of a significant risk for delayed onset of TMJ symptoms after whiplash trauma is crucial for making adequate diagnoses, prognoses and medicolegal decisions.

THESE AUTHORS ALSO NOTE:

Impaired and painful jaw movements can be symptoms of TMJ injury, but they also can be associated with whiplash neck injury.

These authors conducted this study because it is unclear whether a “delayed onset of symptoms can occur in TMJs that appear unaffected directly after whiplash trauma.”

These authors used 60 consecutive patients who were involved in a rear-end car collision and then followed up with them a year or more later. None of the patients directly injured their head or neck, and all were between WAD grades 1 - 3. They also used 53 matched control subjects.

At the time of the initial orthopedic examination (between 3 – 15 days post injury), the patients also underwent MR imaging.

At the follow-up examination, TMJ symptoms were consistently located “at the site immediately in front of the ear canal and tragus.”

A delayed TMJ symptom was defined as a “new TMJ symptom that did not occur in association with the accident, but evolved sometime during the follow-up period.”

The typical TMJ symptoms presented were clicking, crepitations, transient locking, locking with restricted mandibular movements, mandibular deflection and pain.

At the initial evaluation, 42% of the whiplash patients were using pain drugs daily, and 10% were using pain drugs occasionally.

	Initial Evaluation Injured Patients	Initial Evaluation Control Subjects	Final Evaluation Injured Patients	Final Evaluation Control Subjects
Disturbed Sleep	44%	2%	41%	0%
Symptoms Negatively Impacting Daily Life	53%	2%	41%	4%
TMJ Symptoms as Main Complaint	5%	2%	19%	3%

TMJ symptoms as the main complaint in the whiplash-injured group increased from 5% at the initial evaluation to 19% at the follow-up evaluation. This increase in TMJ symptoms was found only in the female patients.

This is a good study because it is a prospective study where they recruited their subjects from a hospital following a whiplash trauma.

"Our hypothesis that delayed TMJ symptoms frequently appear after whiplash trauma was verified."

"One in five subjects reported that TMJ symptoms were their main complaint one full year after the accident. This was quadruple the number of subjects reporting TMJ symptoms as their main complaint directly after the accident, and the increase was found in female subjects."

"Neck-related symptoms after whiplash trauma are more common in women than in men," because "given the same head size, women have less neck musculature mass than do men, which makes them more susceptible to this type of trauma."

The results of this study indicate that the "TMJ is more vulnerable in women than in men because the significant increase in the number of patients reporting TMJ symptoms as the main complaint was attributed to women."

In this study, significantly more subjects reported having TMJ pain in the whiplash trauma group than in the control group, which is consistent with other studies.

"At follow-up in our study, one in three subjects reported having TMJ pain, which was five times more frequent than in control subjects."

"TMJ pain intensity increased significantly from the inceptive examination to follow-up for female patients, which was also the case for TMJ symptoms being the main complaint."

"The majority of subjects with TMJ symptoms as their main complaint at follow-up reported the onset of new symptoms that were consistent with painful non-reducing TMJ disk displacement."

CONCLUSIONS

"One in three people who are exposed to whiplash trauma, which induces neck symptoms, is at risk of developing delayed TMJ pain and dysfunction with onset during the year after the accident."

KEY POINTS FROM DAN MURPHY.

- 1) Impaired and painful jaw movements can be symptoms of TMJ injury, but they also can be associated with whiplash neck injury.
- 2) TMJ symptoms were consistently located "at the site immediately in front of the ear canal and tragus."
- 3) Typical TMJ symptoms presented were clicking, crepitations, transient locking, locking with restricted mandibular movements, mandibular deflection and pain.
- 4) This study shows that "delayed TMJ symptoms frequently appear after whiplash trauma."
- 5) "One in five subjects reported that TMJ symptoms were their main complaint one full year after the accident. This was quadruple the number of subjects reporting TMJ symptoms as their main complaint directly after the accident, and the increase was found in female subjects."
- 6) "Neck-related symptoms after whiplash trauma are more common in women than in men," because "given the same head size, women have less neck musculature mass than do men, which makes them more susceptible to this type of trauma."
- 7) The "TMJ is more vulnerable in women than in men."
- 8) Significantly more subjects have TMJ pain in the whiplash trauma group than in the control group.
- 9) "At follow-up in our study, one in three subjects reported having TMJ pain, which was five times more frequent than in control subjects."
- 10) "TMJ pain intensity increased significantly from the inceptive examination to follow-up for female patients, which was also the case for TMJ symptoms being the main complaint."
- 11) "The majority of subjects with TMJ symptoms as their main complaint at follow-up reported the onset of new symptoms that were consistent with painful non-reducing TMJ disk displacement."
- 12) "One in three people who are exposed to whiplash trauma, which induces neck symptoms, is at risk of developing delayed TMJ pain and dysfunction with onset during the year after the accident."