

Chronic Headache Following a Motorcycle Accident: Clinical Improvement After Osteopathic Management — A Case Report

Abstract

Background:

Persistent headache and migraine symptoms may occur following traumatic events. Their clinical presentation may involve several anatomical regions and complex mechanical findings. Persistent headache attributed to trauma is recognized as a secondary headache disorder, although its clinical presentation may resemble primary headache disorders such as migraine [1,2].

Case Presentation:

A female patient presented to an osteopathic practice on December 1, 2023, with a history of headache and migraine symptoms following a motorcycle accident in 2017. Approximately one month after the accident, she developed right ophthalmic migraine and right-sided neuralgic symptoms involving the eye, supraorbital and temporal regions. Previous radiographic examinations had shown reversal of the cervical spinal curvature, cervical and thoracic disc degeneration, and thoracic hyperkyphosis, with a history of Scheuermann disease. Osteopathic assessment identified a right-sided pelvic tilt considered part of her natural postural organisation and marked restriction of thoracic mobility on the right side of the apex of the thoracic kyphosis.

Intervention and Outcome:

Treatment followed a global osteopathic approach, including thoracic tissue release and mobilisation, treatment extending from the cranial base to the pelvis, and a cranial osteopathic approach. The patient reported initial relief after the first session and further improvement at follow-up four days later. By the end of December 2023, she reported complete resolution of the previously described symptoms. No recurrence was reported during consultations in February and April 2024, during telephone follow-up in April 2026, or at consultation on July 2, 2026.

Conclusion:

This case describes an association between osteopathic management and sustained clinical improvement. A causal relationship cannot be established from a single case. The findings may nevertheless warrant further investigation of thoracic mechanical dysfunction in similar presentations.

Keywords: Osteopathy; headache; migraine; thoracic spine; mechanical dysfunction; case report

1. Introduction

Headache and migraine symptoms may occur following traumatic events and may persist over extended periods [1,2]. In clinical practice, patients presenting with persistent symptoms may demonstrate mechanical findings involving several regions of the musculoskeletal system.

Osteopathic assessment involves the clinical identification of mechanical and functional findings that may be present in different regions of the

body. However, determining the clinical relevance of an individual mechanical finding remains challenging, particularly when several findings coexist. The reliability of spinal palpatory assessment has been investigated extensively, with variability reported between examiners and between different palpatory procedures [3]. The concept of somatic dysfunction and its clinical interpretation also remains subject to ongoing discussion regarding its pathophysiological basis and diagnostic reliability [4].

The present case concerns a patient who developed right-sided ophthalmic migraine and neuralgic headache symptoms following a motorcycle accident in 2017. Several years after the accident, she presented for osteopathic assessment with documented cervical and thoracic radiographic abnormalities and several mechanical findings on clinical examination.

This report describes the patient's clinical history, osteopathic assessment, treatment and subsequent clinical evolution. Particular attention is given to a marked restriction of thoracic mobility identified at the right side of the apex of the thoracic kyphosis.

The purpose of this case report is to document the clinical observation and its subsequent evolution. It does not seek to establish a causal relationship between the thoracic finding and the patient's symptoms.

2. Case Presentation

The patient reported a motorcycle accident in 2017. According to her history, the motorcycle was travelling at approximately 40 km/h when it slipped on gravel and left the road on a very steep slope. The patient,

who was a passenger, was ejected and subsequently dragged during the accident. Emergency services attended the scene and she was transported to the Centre Hospitalier Universitaire de Ganges, where further examinations were performed.

Radiographic examinations following the accident showed reversal of the cervical spinal curvature, cervical and thoracic disc degeneration, and thoracic hyperkyphosis. A history of Scheuermann disease was also reported.

Approximately one month after the accident, the patient developed right ophthalmic migraine and right-sided neuralgic symptoms involving the right eye, supraorbital region and temporal region. According to the clinical history recorded, symptom intensity was greatest between six months and one year following the accident. The patient reported treatment with paracetamol 1000 mg.

The symptoms subsequently persisted for several years.

The patient first attended the osteopathic practice on December 1, 2023. Following the medical history and review of the available radiographic examinations, an osteopathic examination was performed.

3. Osteopathic Assessment

Osteopathic assessment identified a right-sided pelvic tilt considered part of the patient's natural postural organisation, together with a marked

restriction of thoracic mobility on the right side of the apex of the thoracic kyphosis.

The practitioner noted that this mechanical organisation was considered to have been present before the accident, but clinically appeared to have become more pronounced following the traumatic event. This observation represents the practitioner's clinical interpretation and was not objectively measured.

The marked thoracic restriction was considered a significant finding within the overall mechanical presentation and became the principal regional focus of the first treatment session.

4. Osteopathic Management

The first treatment was performed on December 1, 2023.

Approximately half of the treatment was devoted to tissue release and mobilisation of the thoracic region and the area surrounding the identified restriction. Approximately one quarter of the treatment involved work extending from the cranial base to the pelvis, while approximately one quarter involved a cranial osteopathic approach.

The patient reported an initial feeling of relief at the end of the session.

The patient was seen again on December 5, 2023. She reported that she felt better and that the improvement had persisted following the previous session. A further osteopathic treatment was performed, with approximately one third of the treatment directed towards the thoracic

region, one third towards the tissues surrounding the thorax and one third towards a cranial osteopathic approach.

5. Clinical Outcome

The patient was seen for five osteopathic consultations between December 2023 and July 2026.

At the first consultation, on December 1, 2023, the patient presented with a history of persistent right-sided ophthalmic migraine and neuralgic symptoms involving the right eye, supraorbital region and temporal region. Osteopathic assessment identified, among other findings, a marked restriction of thoracic mobility at the right side of the apex of the thoracic kyphosis. Treatment was directed primarily towards the thoracic region, within a broader global osteopathic approach.

At the second consultation, on December 5, 2023, the patient reported that she was feeling significantly better and that the improvement had persisted since the first treatment.

By the end of December 2023, the patient reported complete resolution of the previously described right ophthalmic and temporal neuralgic symptoms.

The patient subsequently attended consultations in February 2024 and on April 10, 2024, for other clinical complaints. During these consultations, no recurrence of the previously reported ophthalmic or temporal neuralgic symptoms was reported.

At the beginning of April 2026, the patient was contacted by telephone. She reported that the ophthalmic and temporal neuralgic symptoms had not recurred since their resolution in December 2023.

Written informed consent for publication of this case report was subsequently obtained from the patient and signed on April 25, 2026.

The patient was seen again on July 2, 2026, for a fifth osteopathic consultation. At this consultation, she again reported no recurrence of the right ophthalmic or temporal neuralgic symptoms.

6. Discussion

This case describes the clinical evolution of persistent right-sided ophthalmic and temporal neuralgic symptoms occurring after a motorcycle accident in 2017. The symptoms developed approximately one month after the accident and subsequently persisted for several years before the patient presented for osteopathic assessment in December 2023.

The patient had previously undergone medical and radiographic assessment following the accident. Reported findings included reversal of the cervical spinal curvature, cervical and thoracic disc degeneration, and thoracic hyperkyphosis, with a history of Scheuermann disease. The clinical presentation therefore involved several mechanical findings, some of which were pre-existing, rather than an isolated thoracic abnormality.

During the first osteopathic assessment, a marked restriction of thoracic mobility was identified on the right side of the apex of the thoracic kyphosis, together with a right-sided pelvic tilt considered part of the patient's natural postural organisation. This thoracic finding was considered clinically important within the overall mechanical presentation. However, it should not be interpreted as an established cause of the patient's symptoms.

The treatment itself was also not restricted to the thoracic region. The first session included treatment of the thoracic region and surrounding tissues, an approach extending from the cranial base to the pelvis, and a cranial osteopathic approach. The second session followed a similarly global approach. Consequently, the clinical evolution cannot be attributed to a specific anatomical region or treatment component.

From an osteopathic postural perspective, the findings observed in this patient may be considered within the context of a broader mechanical organisation rather than as isolated regional findings. Concepts of muscular chains and fascial continuity have been proposed to describe relationships between different anatomical regions and their potential contribution to global mechanical organisation [5,6]. The right-sided pelvic tilt was considered part of the patient's natural postural organisation, while the marked restriction of thoracic mobility represented a prominent mechanical finding within this organisation. The treatment therefore followed a global rather than exclusively regional approach. However, this postural interpretation remains clinical and was not objectively assessed using quantitative postural measurements.

The patient reported improvement immediately following the first session, with the improvement maintained at the second consultation four days later. By the end of December 2023, she reported complete resolution of the right ophthalmic and temporal neuralgic symptoms.

The subsequent clinical course is noteworthy. The patient was seen again in February and April 2024 for other complaints, without reported recurrence of the previously described neuralgic symptoms. More than two years later, during telephone contact in April 2026, she again reported no recurrence. This absence of recurrence was subsequently reported again at a fifth osteopathic consultation on July 2, 2026.

The temporal relationship between the osteopathic intervention and the subsequent improvement is clinically interesting. However, a causal relationship cannot be established from this case. Several factors must be considered, including the multifactorial nature of headache following trauma, the global character of the osteopathic intervention, and the possibility of spontaneous fluctuation or resolution of symptoms.

Contemporary models of manual therapy also suggest that clinical effects may involve multiple interacting mechanical, neurophysiological and contextual mechanisms rather than a simple local mechanical correction [7]. This provides a possible framework for interpreting the clinical evolution without attributing the outcome to a single anatomical structure or treatment technique.

In addition, the thoracic restriction identified during the initial assessment cannot be considered a demonstrated primary lesion. The finding was made clinically and was not supported by objective measurement of thoracic mobility or by imaging specifically assessing the restriction. Furthermore, the patient presented with several other mechanical findings that may have contributed to her clinical presentation.

The case may nevertheless be relevant to the hypothesis underlying the present author's broader clinical observations: that a marked mechanical restriction at the thoracic apex may sometimes represent an important component of a wider postural and mechanical organisation. In the present case, this remains an observation rather than a demonstrated mechanism.

The sustained absence of the previously reported symptoms over the subsequent period provides an additional clinical observation, particularly because the patient continued to attend the practice for other complaints in 2024 and was reassessed in 2026. Nevertheless, the long-term outcome cannot establish that osteopathic treatment was responsible for maintaining symptom resolution.

Further investigation would therefore be required to determine whether similar patients demonstrate comparable thoracic mechanical findings and whether treatment directed towards such findings is associated with reproducible clinical outcomes. Future studies should incorporate clearly defined clinical outcome measures, reproducible assessment procedures and appropriate follow-up periods.

This case should consequently be considered hypothesis-generating. Its principal value lies in documenting a clearly described clinical observation and its subsequent long-term evolution rather than in demonstrating treatment efficacy or establishing a specific biomechanical mechanism.

7. Conclusion

This case describes the reported resolution of persistent right-sided ophthalmic and temporal neuralgic symptoms following osteopathic management in a patient with a history of motorcycle trauma and multiple mechanical findings, including marked restriction of thoracic mobility at the apex of the thoracic kyphosis.

Clinical improvement was reported following two osteopathic sessions and was followed by sustained absence of the previously described symptoms during subsequent consultations in 2024 and at reassessment in July 2026.

Because the intervention involved several anatomical regions and approaches, and because this is a single case, a causal relationship between the thoracic restriction and symptom resolution cannot be established. The case is therefore presented as a clinical observation that may warrant further investigation.

8. Implications for Practice

This case suggests that osteopathic assessment of patients with persistent headache symptoms following trauma may consider mechanical findings beyond the region in which symptoms are experienced.

In particular, assessment of thoracic mobility may provide additional information within a broader global mechanical examination.

However, this observation derives from a single case and should not be interpreted as evidence of treatment efficacy or causality. Further research is required to determine whether similar findings and clinical outcomes can be reproduced.

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Ethics / Patient Consent

Written informed consent was obtained from the patient for publication of this case report.

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