

# ***Spinous process fractures after chiropractic massage in a previously healthy subject***

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## **ABSTRACT**

*Increasing available alternative therapies to the treatment of back pain and sometimes difficult access to specialized medical evaluations allowed a widespread use of alternative therapies for the treatment of back pain. We describe a case with a consequence of massage therapy in a patient with initial symptoms of back pain resulting in spinous process fractures. She promptly searched medical attendance and cervical plain radiograph revealed avulsion of spinous processes of C6 and C7 in their outer third. Due to benign nature of lesion, without evidence of instability and spinal cord injury, the subject was managed conservatively, with application of a Philadelphia collar and analgesic medication. We reinforce the need of medical attention before beginning any therapeutic method in order to identify previous alterations and plan an adequate programming.*

## **KEYWORDS**

*Low back pain, manipulation spinal, spinal diseases.*

## **RESUMO**

***Fratura de processo espinhoso após terapia quiroprática em um indivíduo previamente saudável***

*A disponibilidade de terapias alternativas para o tratamento da dor lombar e o difícil acesso a serviço médico especializado têm permitido um uso indiscriminado de terapias para o tratamento dessa dor. Descrevemos um caso de uma paciente submetida à terapia quiroprática por causa de dor cervical que evoluiu posteriormente com persistência da dor. A investigação radiológica evidenciou fratura com avulsão de processos espinhosos de C6 e C7. Por causa da natureza estável da lesão, o caso foi conduzido conservadoramente com colar Philadelphia, no entanto reforçamos a necessidade do correto diagnóstico da dor de coluna espinhal, especialmente se persistente e associada a sinais localizatórios.*

## **PALAVRAS-CHAVE**

*Dor lombar, manipulação da coluna, doenças da coluna vertebral.*

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## Introduction

Due to increased available alternative therapies to the treatment of back pain and sometimes difficult access to specialized medical evaluations, there is a widespread use of alternative therapies for the treatment of back pain.<sup>1-3</sup>

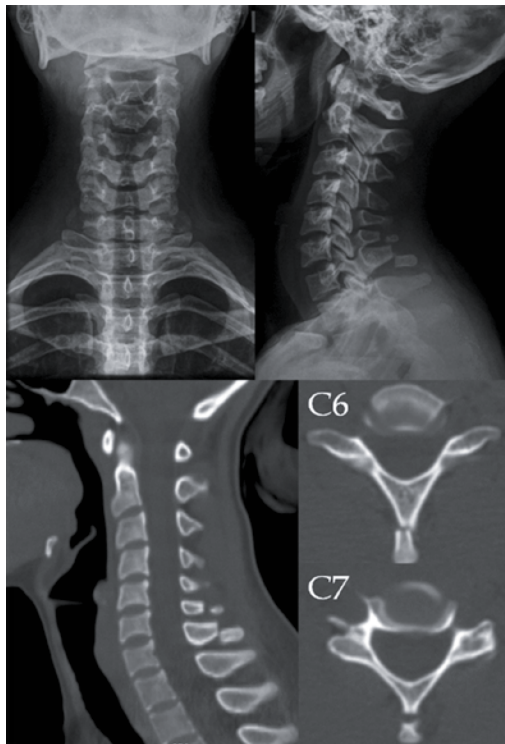
Reports of CNS injury resulting from neck manipulation are well documented in medical literature. Chiropractic spinal manipulations by trained practitioners are responsible for most, if not all reported cases.<sup>1-5</sup>

We describe a case with a consequence of massage therapy in a patient with initial symptoms of back pain resulting in spinous process fractures.

## Case description

We report a 25-year-old woman with an acute onset of intense cervical pain installed immediately after chiropractic massage due to previous mild back pain. She referred a score of 10/10 in Analogic Visual Scale and amelioration in rest position and in use of analgesic medication.

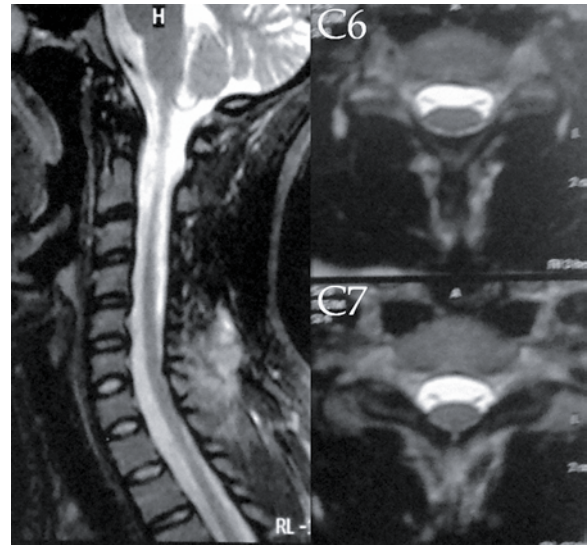
She promptly searched medical attendance and cervical plain radiograph revealed avulsion of spinous processes of C6 and C7 in their outer third (Figure 1).



**Figure 1 – Radiological evaluation.** Above, plain radiographs of cervical spine, revealing C6 and C7 spinous processes fractures. Below, cervical CT displaying the same findings.

Complementary computed tomography (CT) of whole spine did not reveal additional findings. Cervical magnetic resonance (MR) could also show hyperintensity in surrounding soft tissue, suggesting dynamic nature of lesion (Figure 2).

Due to benign nature of lesion, without evidence of instability and spinal cord injury, the subject was managed conservatively, with application of a Philadelphia collar and analgesic medication. She was discharged with moderate pain (6/10) and with ambulatory setting follow-up.



**Figure 2 – Cervical spine MR, disclosing fractures and hyperintensities in soft tissue surrounding spinous processes, suggesting soft tissue damage.**

## Discussion

Chiropractic manipulation is an alternative therapy characterized by musculoskeletal manipulation. In spine, it consists in different patterns of massage and flexion-extension movements, also with application of pressure.<sup>1-5</sup>

Although overall morbidity of chiropractic manipulation is clearly small,<sup>2</sup> increasing data suggest that complications to spinal manipulation may happen and are most often seen in the cervical spine. Those complications may be specifically dangerous when manipulation is applied in already ill patients, such as cases of osteopenic and osteolytic diseases in a myriad of infectious, metabolic and neoplastic conditions.<sup>1-5</sup>

Even in previously healthy patients, the application of pressure and flexion-extension movements might force bone and ligamentous structures.<sup>1-5</sup> In our case, the probable cause for fracture was overextension, forcing one spinous process over the other and causing fracture. C6 and C7 were probably fractured because of the high

potential of sagittal movement in these cervical levels. Additional hyperintensities on MR suggest that not only bone, but soft tissue was also affected, with implications in pain and healing.

We reinforce the need of medical attention before beginning any therapeutic method in order to identify previous alterations and plan an adequate programming.

## Competing interests

The authors declare no conflicts of interest.

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