

# **Diagnostic Cervical Zygapophysial Joint Blocks for Chronic Cervical Pain**

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FROM ABSTRACT.

Objectives.

- (1) To determine the prevalence of cervical zygapophysial joint pain in a specialist clinical setting.
- (2) To review the number of diagnostic blocks needed to identify the segmental level of the symptomatic joints.
- (3) To determine the distribution of segmental levels of cervical zygapophysial joint pain in a clinical setting.

Design and Setting.

Data was retrospectively gathered on ninety-seven patients aged 18 to 82 years with chronic cervical pain (with or without headache) of more than six months duration, referred to three independent Rehabilitation Medicine specialists in their hospital outpatient clinics and private rooms.

Intervention.

Diagnostic fluoroscopic cervical third occipital and medial branch blocks of their zygapophysial joints.

Results.

On a worst case analysis 35 of 97 (36%) of the subjects were found to have a symptomatic cervical zygapophysial joint (Confidence Interval: 27%-45%).

The most common symptomatic levels were C3/4 (11 of 35; 31%) and C5/6 (10 of 35; 29%).

The symptomatic segmental level was found at the first attempt by reference to a standard pain diagram in 83% (29 of 35) of cases.

Conclusion.

The prevalence rate in this clinical study is consistent with that found in previous studies in a research setting.

In a conventional clinical setting zygapophysial joints are a common source of pain in patients presenting with chronic neck pain, with or without headache, and this is readily diagnosable.

Diagnosis by zygapophysial joint injections allows these patients to consider the treatment of radio frequency neurotomy.

THESE AUTHORS ALSO NOTE:

“Chronic neck pain is common in the community and a significant cause of morbidity.”

Studies have reported that “some 50% of patients with chronic neck pain after motor vehicle accidents have pain stemming from a zygapophysial (Z) joint.”

This implies “that a specific anatomical diagnosis is being missed in a large proportion of patients if CZJ pain is not considered.”

Percutaneous radiofrequency neurotomy is a procedure shown in a double-blind randomised controlled trial to relieve pain for patients with CZJ pain.

“Making a scientific diagnosis of pain arising from a CZJ requires specialized facilities.”

“CZJ pain cannot be diagnosed by medical imaging.” **[IMPORTANT]**

“Nothing that might be evident on plain films, CT, or MRI reliably implicates the zygapophysial joints as a source of pain.” **[IMPORTANT]**

“Controlled diagnostic anaesthetic blocks performed under image-intensifier guidance are the only valid means of diagnosing CZJ pain.”

Several insertions of diagnostic blocks at different segmental levels are necessary until the symptomatic joint is found.

## METHODS

A retrospective study on 97 sequential patients with chronic neck pain for more than 4 months duration.

The CZJ joints received diagnostic blocks to the medial branches of the dorsal rami, under fluoroscopic control.

The initial level for diagnostic block was “selected for each patient by comparing their area of worst pain (typically asking them to place their hand over the worst of their pain) with the published pain distribution maps of Dwyer et al. (Spine, 1990).”

The patient was blinded to the local anaesthetic used (short-acting 2% lignocaine or longer-acting 0.5% bupivacaine).

## RESULTS

The majority (41%) of chronic neck pain was related to motor vehicle accidents.

The duration of pain ranged from 4 to 192 months, with a mean duration of 33 months.

"Assuming that all patients who did not return for confirmatory blocks were negative, the worst-case prevalence of CZJ pain in the present series was 36% (35/97) with range of 27% to 45%."

32% of the time the painful joint was C3-4.

28% of the time the painful joint was C5-6.

17% of the time the painful joint was C2-3.

14% of the time the painful joint was C4-5.

9% of the time the painful joint was C6-7.

"A positive CZJ was found on the first attempt in 30% (29 of 97) of the total group and 83% (29 of 35) of those who had proven CZJ pain."

## DISCUSSION

The prevalence of cervical zygapophysial joint pain in published studies in patients with chronic neck pain is 54% (40%-68%) or 49% (33%-64%).

The prevalence in this study is 36% (27%-45%).

This prevalence (36%) in the present study is a worst-case estimate, and the actual number is probably close to 50%.

Cervical pain maps are an accurate first guide to detect CZJ pain.

Using cervical pain maps in the present study "allowed 83% of proven symptomatic joints to be identified with only one iteration of the diagnostic block."

This study "establishes a scientific diagnosis for patients otherwise suffering from an undiagnosed condition."

This study "may help prevent these patients' pain being labeled with inaccurate physical or psychosomatic labels."

## KEY POINTS FROM DAN MURPHY

- (1) Most chronic neck pain is related to whiplash injury, 41% in this study.
- (2) About 50% of chronic neck pain can be attributed to a single facet joint.
- (3) Imaging with radiographs, CT, or MRI do not identify painful CZJ.
- (4) The diagnostic "gold standard" for CZJ pain is several injections of different anesthetics with fluoroscopic guidance to the medial branch of the posterior primary rami innervating the joint. This requires time, special equipment, and is invasive.
- (5) Pain drawings can identify the painful CZJ 83% of the time.
- (6) 17% of the time the pain drawing did not correctly identify the painful CZJ.  
[IMPORTANT]
- (7) About 50% of the time, chronic neck pain was not arising from the CZJ, and this was also not ascertained by the pain drawing.
- (8) Consequently, cervical pain drawings did not identify the source of pain in about 67% of these chronic neck pain patients.