

Provocative cervical discography symptom mapping.

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Abstract

BACKGROUND CONTEXT: In a small prospective study assessing 10 symptomatic and 10 asymptomatic subjects, Schellhas et al. compared cervical discography to magnetic resonance imaging. Within that study he reported on the distribution of pain for the C3-C4 to C6-C7 levels. Four years later, Grubb and Ellis reported retrospective data from his 12-year experience using cervical discography from C2-C3 to C7-T1 in 173 patients. To date, no large prospective study defining pain referral patterns for each cervical disc has been performed. **PURPOSE:** To conduct a prospective visual and statistical descriptive study of pain provocation of a cohort of subjects undergoing cervical discography. **STUDY DESIGN/SETTING:** Prospective multicenter descriptive study. **METHODS:** Pain referral maps were generated for each disc level from patients undergoing cervical discography with at least two levels assessed. If concordant pain was reproduced in a morphologically abnormal disc, the subject immediately completed a pain diagram. An independent observer interviewed the subject and recorded the location of provoked symptoms. Visual data were compiled using a body sector bit map, which consisted of 48 clinically relevant body regions. Visual maps with graduated color codes and frequencies of symptom location at each cervical disc level were generated. **RESULTS:** A total of 101 symptom provocation maps were recorded during cervical discography on 41 subjects. There were 10 at C2-C3, 19 at C3-C4, 27 at C4-C5, 27 at C5-C6, 16 at C6-C7 and 2 at C7-T1. Predominantly unilateral symptoms were provoked just as often as bilateral symptoms. The C2-C3 disc referred pain to the neck, subocciput and face. The C3-C4 disc referred pain to the neck, subocciput, trapezius, anterior neck, face, shoulder, interscapular and limb. The C4-C5 disc referred pain to the neck, shoulder, interscapular, trapezius, extremity, face, chest and subocciput. The C5-C6 disc referred pain to the neck, trapezius, interscapular, suboccipital, anterior neck, chest and face. The C6-C7 disc referred pain to the neck, interscapular, trapezius, shoulder, extremity and subocciput. At C7-T1 we produced neck and interscapular pain. Visual maps with graduated color codes and frequencies of symptom location at each cervical disc level were generated. **CONCLUSIONS:** In conclusion, these results confirm the observations of prior investigators that cervical internal disc disruption can elicit axial and peripheral symptoms. The particular patterns of pain generation allow the discographer to preprocedurally anticipate disc levels to assess. With these data, the number of disc punctures that are required can be limited rather than routinely assessing all cervical discs.

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