

Summary of: Pain perception during inferior alveolar injection administered with the Wand or conventional syringe

C. Yesilyurt,¹ G. Bulut² and T. Taşdemir³

VERIFIABLE CPD PAPER

FULL PAPER DETAILS

¹Assistant Professor, ²Research Assistant, Department of Operative Dentistry, Faculty of Dentistry, Karadeniz Technical University, 61080 Trabzon, Turkey; ³Assistant Professor, Department of Endodontics, Faculty of Dentistry, Karadeniz Technical University, 61080 Trabzon, Turkey
*Correspondence to: Dr Cemal Yesilyurt
Email: cyesilyurt@ktu.edu.tr

Online article number E10
Refereed Paper – accepted 29 May 2008
DOI: 10.1038/sj.bdj.2008.757
©British Dental Journal 2008; 205: E10

Objective This study compared a computerised device (the Wand) with a conventional syringe in terms of the pain of needle insertion and injection during inferior alveolar nerve (IAN) block injection. **Methods and materials** The subjects were 40 patients between the ages of 18 and 30 years requiring local anaesthesia for dental restoration in the mandible. Before anaesthetic administration, the patients' anxiety levels were determined. Contralateral IAN injections were administered at two separate appointments with random use of either the Wand or a conventional syringe. Following the injection, the patients used both the pain rating score (PRS) and a visual analogue scale (VAS) to assess the intensity of pain. **Results** When pain was measured after the injection, the Wand was found to be less painful than the syringe for the pain of both needle insertion and injection ($p < 0.05$). **Conclusion** The Wand technique resulted in significantly lower pain scores during the IAN block injections. Most of the patients preferred the IAN injection with the Wand for future dental injections.

EDITOR'S SUMMARY

For the second time in recent issues we have a study involving the Wand, a computerised device for delivering local anaesthetics. The previous paper¹ came out somewhat equivocally as to whether or not the device made much of a difference in terms of pain control, although settled on the side of greater child patient acceptance.

This current research concluded that significantly lower pain scores were achievable with the device, used in this case on young adults in the 18–30 year age range, although the authors do suggest that their next step would be to test it on a broader population in the future.

Pain is a very subjective sensation encompassing level of anxiety, trust, personality and perceived control over the painful stimulus. However, there is no doubt that the inferior dental (or alveolar) nerve block can be one of the less comfortable injections to receive as well as one of the more complex to administer.

Therefore, the mix of circumstances makes for extremely difficult interpretation of the results.

Given that there is already a high degree of skill required and that the quality and technical finesse of local anaesthetic needles has improved enormously in recent years, perhaps it is area in which there is not a great deal more room for manoeuvre in terms of pain reduction and control. Indeed, with single use needles, gone are the days of swapping to a new one only when the current one felt as if it was getting blunt! This said, the need for progress is always present and it may well be that this device does gain further acceptance by both the profession and patients as technique is refined and familiarity gained on both sides of the syringe.

1. Versloot J, Veerkamp J S J, Hoogstraten J. Pain behaviour and distress in children during two sequential dental visits: comparing a computerised anaesthesia delivery system and a traditional syringe. *Br Dent J* 2008; **205**: E2.
DOI: 10.1038/sj.bdj.2008.414

The full paper can be accessed from the *BDJ* website (www.bdj.co.uk), under 'Research' in the table of contents for Volume 205 issue 5.

Stephen Hancocks,
Editor-in-Chief
DOI: 10.1038/sj.bdj.2008.801

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IN BRIEF

- The Wand technique seems to be of benefit during inferior alveolar injection of patients with low dental anxiety.
- Most of the patients preferred inferior alveolar injection with the Wand than with conventional syringe for future dental injections.
- The Wand technique not only lowers the pain of injection, but also eliminates the visual stimulus of dental syringes for patients with low dental anxiety.

COMMENT

The aim of this clinical study was to compare a computerised device (the Wand) with a conventional syringe in terms of the pain of needle insertion and injection during inferior alveolar nerve block injection.

Different scales and methods have been used for the assessment of pain after needle insertion in previous studies. Among them, visual analogue scale is considered to be a valid and reliable ratio scale for measurement of pain. Also, the level of discomfort could be evaluated in four categories in order to simplify pain rating. In this study both techniques were used. However, it is well known that pain perception is a highly subjective and variable experience modulated by many factors such as anxiety, fear, trust, perceived control over painful stimulus, interpretation of the painful stimulation and personality. Anxiety of patients must be evaluated before interventional procedures. Clinically, the low mean anxiety score using Corah's Dental Anxiety Scale (DAS) questionnaire indicates minimal anxiety. If more anxious patients had participated in the study, pain ratings could have been higher.

One major limitation of this study is the lack of experimenter and patient blinding. Since the groups were the Wand and the conventional injection technique, the clinician would have had to know which treatment to provide. On the other hand, the study attempted to avoid experimenter bias as far as possible by randomisation of the patients and injection techniques.

According to the results of this clinical study, it could be concluded that the Wand seemed to cause less pain during the inferior alveolar nerve block injections. However, as the authors mentioned, the clinical significance of the results should be interpreted with caution since those studied were a young adult population, and results might not apply to children or the elderly.

O. Yoldas, Head of Department of Endodontics and Conservative Dentistry, Cukurova University Faculty of Dentistry, Turkey

AUTHOR QUESTIONS AND ANSWERS**1. Why did you undertake this research?**

The aim of this study was to compare the pain perception of patient receiving an inferior alveolar nerve block injection using a Wand[®] computerised device or a traditional syringe at two sequential treatment sessions.

2. What would you like to do next in this area to follow on from this work?

We would like to investigate the Wand[®] computerised device during other oral local anaesthesia injections with a broader population in the future.