



PERCEPTION OF PAIN USING DIFFERENT SIZE OF NEEDLE GAUGES

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ARTICLE INFO

Article History:

Received 18th February, 2017

Received in revised form 12th March, 2017

Accepted 26th April, 2017

Published online 28th May, 2017

Key words:

Pain, local anesthesia, needle gauge, dentistry, injection

ABSTRACT

Since the inception of pain in, the field of dentistry has had the challenge of trying to render a painless experience for the patient. The fear of pain attributed to anesthetic needle injection has been stated as an obstacle in providing appropriate dental care. A variety of patient management techniques have been attempted to improve patient comfort during dental anesthetic administration, including but not limited to smaller gauge needle sizes, slow computer-regulated administration, distraction techniques, vibrating devices, and topical anaesthetics .

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INTRODUCTION

Majority of patients have a fear of the anaesthetic injection and mostly associates dental treatment with pain. The pain associated is the first thing the patient thinks about when considering to undertake any dental care. The needle/pain is very influential in a patient's perception of the dental profession. According to the American Dental Association, fear of pain is a very important factor that stops patients from visiting their dentists. Various kinds of fear associated to previous clinical experience affect patients' attitude to local anaesthesia or dentist^[1].

Pain is explained to be an unpleasant sensation which ranges from mild discomfort to extreme agonizing distress that is correlated to causepotential damage to the tissue. And definitely it is multidimensional complex bio-psychosocial event that varies between every single individual^[2]. Dental pain is considered to be one of the most important reason for an individual to visit an endodontist.

And almost all the major Endodontic treatments basically require the injection of local anesthesia. Pain in dental therapy is associated with both procedural pain and post operative pain. But the pain related to theendodontic treatment is overestimated. Most of the patients gets anxious during the Root canal treatment due the pain they expect they will undergo. Because of this anxiety and the added effects of inflammation, the threshold of pain gets decreased and thus it reduces the effect of LA^[3].

Although local anaesthesia techniques do not provide pain-free treatment, this pain is generally tolerable. Pain can result from the mechanical trauma of needle introduction into the site of injection, or from the sudden distension of the tissues, resulting from a rapid discharge of the contents of the syringe. Pain can also be caused by the stimulation of the first few drops of the local anaesthetic^[4,5].

There are various methods to assess the level of pain^[6-8]

1. Numeric Rating scale
2. Visual Analog scale
3. Wong- baker faces pain rating scale
4. Pain quality assessment scale

This analysis of pain perception becomes very important because when the people are asked to list the factors they feel is necessary to choose a dentist the two most important are:

1. a dentist who does not hurt and
2. a painless injection^[9].

The endodontic pain is mainly caused due to the inflammation of the pulp tissue occurring as a result of dental caries progressing deep into the tooth^[10]. But, for painless dentistry to be developed successfully, local anestheticshas to be injected with the help of a cartridge, syringe, and needle. This causes the major problem of fear of needles which is also called as trypanophobia and its consequences like, the occurrence of syncope or any other medical emergency situationswhile injecting the local anesthetic agent. More than 50% of medical emergencies which happens in dental offices are either during or immediately following administration of a local anesthetic^[11].

The needle gauges are available in various sizes like 20 size, 21 size, 22 size, 23 size, 26 size, 27 size, 30 size needles. Among these three random sized needles were chosen and used for the study. Successful local anesthesia is the bedrock of pain control in dentistry. Effective pain control is essential to reduce fear and anxiety associated with dental procedures^[12]

Thus, to identify the pain perceived by patients when given with three different sized needle and to vary the use of needle gauges according to the perception of minimum pain by the patients, this study was conducted.

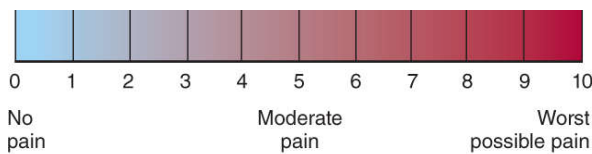
MATERIALS AND METHODS

30 patients visiting a private dental college for root canal treatment for maxillary teeth were included for the study based on the inclusion criteria. 21,22,26 gauge needles were used for delivering the Local anaesthetic solution for infiltration. Patient were asked to rate their pain perception on Numeric Rating Scaling. Data collected were documented and statistical analysis were done.

Where in the groups allocated are as the follows

- Group I- 26 gauge needle
- Group II- 22 gauge needle
- Group III- 21 gauge needle

Numeric Rating Scale Used In This Study



RESULTS

	N	MEAN	STD Deviation
Group I	10	2.40	0.699
Group II	10	4.30	0.675
Group III	10	7.10	0.994
Total	30	4.60	2.111

DISCUSSION

On statistical analysis of the data it was found that the mean pain values of the groups I,II,III were 2.40, 4.30 and 7.10respectively. And the standard deviation values of the group I,II,III were found to be 0.699, 0.675 and 0.994. Pain caused due to injections is because of the penetration of the needle into the skin and by the solution that is being deposited into target tissues^[13]. From the values obtained it is evident that the needle with the maximum size causes least pain. This can be because of the fact that 26 gauge needle required less force when compared to 21 gauge needle. It can also be due to the fact that the larger size needles causes trauma to the soft tissue while perfusion whereas the smaller size needle causes more trauma which results in increased pain experienced by the patients.

CONCLUSION

The larger gauge needle group patients experienced least pain. many patients consider endodontic procedure to be more painful, by using a less painful injection we can reduce the anxiety levels of the patient and can improve the patient cooperation.

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How to cite this article:

Valli B (2017) ' Perception Of Pain Using Different Size Of Needle Gauges', *International Journal of Current Advanced Research*, 06(05), pp. 3660-3661.
 DOI: <http://dx.doi.org/10.24327/ijcar.2017.3661.0341>
