

Comparative Evaluation of Pain Perception Post Periodontal & Implant Surgeries

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Abstract

Pain perception is a complex sensory experience and in most cases it is the fear of pain arising from surgical treatment which refrains patients from availing complete dental treatments. By providing adequate knowledge about the level of pain after various surgeries, clinicians would help their patients to have realistic expectations of their surgical procedures, which would enhance the rapport between the dentist and the patient and in turn increase patient compliance. In this study we evaluated 30 patients undergoing periodontal surgeries and the same number of patients undergoing implant surgeries. Patients' post-surgical pain perception was recorded using a numeric rating scale (NRS, 1-10). In this, the patient was asked to make three pain ratings, corresponding to current, best and worst pain experienced over the past 24 hours. The average of the three ratings was used to represent the patient's level of pain over the previous 24 hours. According to the rating provided, the pain perception was categorized into mild (1-3), moderate(4-6) and severe(7-10). Patients' were also enquired about the duration of the pain and swelling if encountered. The duration and dosages of the medication prescribed were also recorded.

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Introduction

Pain is a subjective perception according to different stimuli. The prospect of surgery is a powerful anxiety provoking stimulus in the dental setting.¹ The International Association for the Study of Pain (IASP) has defined pain as an unpleasant sensory or emotional experience associated with actual or potential tissue damage or described in terms of such damage.² The majority of patients receiving periodontal therapy provided apprehensions regarding further dental appointments and complained about high anxiety levels. Experimental studies have demonstrated that factors associated with patients' emotions, such as anxiety, previous experience, anticipation of stress and control of the environment, can influence the patients' pain perception (Croog et al. 1995, Eli et al. 2003, 2004, Hashem et al. 2006, Schwartz-Arad et al. 2007, Fardal & McCulloch 2012, Kim et al. 2013)^{3,4,5,6}. Studies have also correlated pain with surgery related factors such as surgical type, duration, and operator experience (Seymour et al. 1983, Curtis et al. 1985, Matthews & McCulloch 1993, Griffin et al. 2006)^{7,8}.

Dentists have been encouraged to create an environment that reduces anxiety, improves mood, and focusses attention away from procedures.¹ In contrast, by providing adequate knowledge about the level of pain after various surgeries, clinicians would help their patients to have realistic expectations of their surgical procedures, which would enhance the rapport between the dentist and the patient and in turn increase patient compliance. The aim of this study was the comparative evaluation of pain perception post periodontal and implant surgeries.

Materials & Methods

A total of 60 patients were recruited from the Out Patient Department of Periodontics of Babu Banarasi Das College of Dental Sciences from December 2016 till March 2017. Patients were provided with basic periodontal therapy and were scheduled for respective surgeries. Exclusion criteria that was followed included patients 1) with uncontrolled systemic diseases,

2) taking regular medications in the past 6 months, and 3) using any additional remedies other than prescribed medication for pain control.

Post Surgical Evaluation

Pain perception was evaluated using a descriptive numeric rating scale (NRS Scale) of 1-10, with a score of 1-3 indicating mild pain, 4-6 indicating moderate pain and 6-10 severe pain.

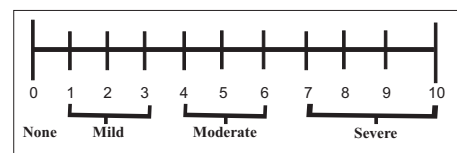
The Numeric Pain Rating Scale Instructions

General Information: The patient is asked to make three pain ratings, corresponding to current, best and worst pain experienced over the past 24 hours. The average of the 3 ratings was used to represent the patient's level of pain over the previous 24 hours.

Patient Instructions (adopted from (McCaffery, Beebe et al. 1989): "Please indicate the intensity of current, best, and worst pain levels over the past 24 hours on a scale of 0 (no pain) to 10 (worst pain imaginable)"

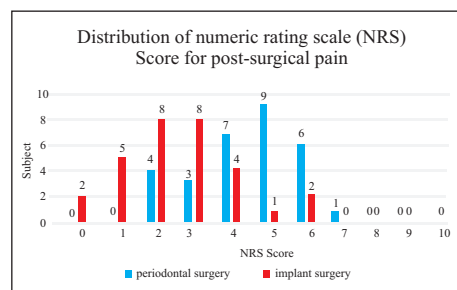
Reference: McCaffery, M., Beebe, A., et al. (1989)

Pain: Clinical manual for nursing practice, Mosby St. Louis, MO.⁹



Patients were also questioned relating to the post-surgical complications, if any. It included the duration of pain and swelling as well as the instances of any post-operative bleeding.

Observations & Results



Type of Surgery	Patient Reported Complications		
	Duration of Pain (Days) Median	Duration of Swelling (Days) Median	Bleeding n(%)
Periodontal	2	1	16.67
Implant	2	0	6.67

The following data was observed and compiled.

The patient reported complications following different surgical types Comparison between periodontal and implant-related surgeries

Following periodontal surgery 23.33% patients perceived mild pain, 73.33% perceived moderate pain while 3.33% perceived severe pain. While in case of implant surgery, 76.67% of patients perceived mild pain, 23.33% perceived moderate pain and none reported severe pain during the first 24 hours of surgery.

However, there was no significant difference between the duration of pain and duration of swelling reported.

Discussion

The perception of pain involves far more than mere sensation. The knowledge of the psychology of pain can greatly enhance the management of acute pain as well. This study has shown that in case of periodontal surgeries majority of patients reported moderate pain during the next 24 hours of surgery while in case of implant surgeries majority reported mild pain. Almost none of the subjects reported severe pain and during the course of one week the patients reported a gradual decline in pain perception. Nearly 20% of patients complained of swelling in the aftermath of periodontal surgeries while only 3% said so in case of implant surgeries. Analgesic consumption was correlated with the perception and duration of post-surgical pain. No patient had to increase the dosage of analgesic other than the prescribed dose. Many studies have shown that the overall incidence of

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post-surgical pain and infection are low following periodontal and implant surgery, and the intensity is mild for the majority of patients (Pack & Haber 1982, Matthews & McCulloch 1993, Eli et al. 2003)^{10,8,4}. In general, this study showed better or comparable findings on pain perception compared to previous studies on periodontal surgery (Curtis et al. 1985, Matthews & McCulloch 1993, Powell et al. 2005, Griffin et al. 2006, Canakci & Canakci 2007)^{11,8,12,13,14}.

Conclusion

Focusing one's attention on pain worsens it. Treating anxiety and providing psychological support has been shown to improve pain and reduce analgesic use¹⁵. Patients' expectations of the amount of pain they should have also influence how much pain they feel, their response to treatment, and whether or not the condition becomes chronic and disabling. Understanding the impact of fear, expectations,

and attention can help physicians deal more effectively with acute pain.

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