


# Extraction of a Grossly Decayed Tooth Without Local Anesthesia But With Audio Analgesia: A Case Report

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Manish Bhagania<sup>1</sup> and Anirudha Agnihotry<sup>1</sup>

## Abstract

Extraction of a tooth of a 28-year-old female patient was being performed without local anesthesia and with music. The patient was not ready for the use of local anesthesia. She was offered all the other anesthetizing options, but she chose music in place of all. Indian devotional music was used and it was seen that the patient did not show any subjective signs of pain or any pain behavior during the extraction procedure, indicating that analgesia was induced through music.

## Keywords

procedural music therapy, clinical improvisation, creative arts therapy, neurologic music therapy, music medicine

## Introduction

Pain and anxiety have a very old relation with dentistry. For some patients, the perception of pain is raised due to the “anticipation syndrome,”<sup>1</sup> for example, anxiety caused in the anticipation of pain, which might be inflicted by the needle of the injection. Studies have been carried out to elicit the origin of the anxiety associated with the dental procedures, and it has been found that the most feared factors in dental practice are “needles and burs”<sup>2</sup>; yet the paradox is that method of controlling pain in most teeth extractions is injection of a local anesthetic.

There has been a lot of research for finding alternatives to this technique to make this procedure painless, to reduce anxiety, and to make the patient comfortable; these include the use of nitrous oxide and oxygen,<sup>3</sup> electronic dental anesthesia,<sup>4</sup> hypnosis,<sup>5</sup> pharmaceutical anxiolytics, audio analgesia,<sup>6-9,4</sup> and audiovisual distractions.<sup>7</sup> A lot of combinations of the above have also been tried. Music has been a promising alternative in the past.

## Case Report

An otherwise healthy 28-year-old female reported to the oral and maxillofacial department with the chief complaint of pain in the lower back left tooth and cavitation due to decay.

On clinical examination, 35 was found to be grossly decayed but was not mobile and was firm in the alveolus, still the patient was advised to get it extracted to avoid any further complications. The patient agreed to get the tooth extracted but she did not comply for a nerve block injection of a local anesthetic. She was offered other options like jet-stream local anesthesia and electronic dental anesthesia. The patient did not choose any

of these options and was highly apprehensive about the use of local anesthesia. Lastly, she was offered to listen to music during the extraction to control her pain and anxiety.

The left lower second premolar was extracted while the patient listened to Indian devotional music called “ram dhun” through ear phones and a regular MP3 player. Topical anesthesia was applied prior to extraction, around the tooth and on the soft tissue surface. The amount used was not copious but just enough to anesthetize the soft tissue, superficially, around the offending tooth. The impinging of the blunt end of the periosteal elevator on the gingiva did not evoke a response. Next, the procedure of extraction began with loosening of the tissue around the tooth using periosteal elevator. The periosteum was elevated and the forceps adjusted onto the tooth and movements were given to luxate the tooth and dilate the alveolar socket. During this procedure, the patient was calm and quiet and did not show any subjective signs of pain. Finally, the tooth came out with traction movement, the bleeding was controlled, and hemostasis was achieved. The procedure was carried out without any complication.

No pain was reported by the patient during the procedure, and no pain behaviors were seen. Pain behaviors, may include verbal complaints of pain and suffering, nonlanguage sounds, facial expressions, body posturing and gesturing, and limitations in activities. Keefe et al<sup>10</sup> described pain behavior in the following way:

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<sup>1</sup> Manipal College of Dental Sciences, Manipal, India

## Corresponding Author:

Anirudha Agnihotry, House no.12, Acharya Compound, Udipi 576104, India  
Email: anirudha.agnihotry@gmail.com

. . . People who have pain may vocalize their distress by moaning, crying or complaining, or may exhibit pain-related body postures or facial expressions. These verbal and nonverbal behaviors have been called *pain behaviors because they serve to communicate the fact that pain is being experienced* (emphasis added).

The extraction was carried out smoothly showing the success of the analgesic and anxiolytic effects of the music as no pain behavior was shown by the patient during the procedure.

## Discussion

Music has always been speculated as a potential alternative to local anesthesia for controlling pain. Music is amusing and distractive at the same time. It engages the attention and distracts the patient from the invasive procedures being performed, thus preventing the “anticipation syndrome” from building up and at the same time bringing down the anxiousness and reducing the perception of pain by increasing the pain threshold. If the patient concentrates enough, it can also induce pure analgesia. Gardener et al<sup>9</sup> has reported carrying out 200 extractions using audio analgesia in the form of white noise/white noise with some music. In this case, we have used music without any manipulation or addition to the regular acoustics of the genre of the music, so it is different from the approach of Gardener.

Gardener et al<sup>9</sup> used audio analgesia on 5000 patients and 65% of them reported no pain during the procedures. Morosko et al<sup>6</sup> have proved that audio analgesia is efficient in reducing pain threshold and pain tolerance.

Gardener, Licklider and Weizz<sup>8</sup> have postulated that: Parts of the auditory and pain systems come together in several regions of reticular formation and lower thalamus. The interactions between the two systems are largely inhibitory. Direct suppression effects and the effects mediated through relaxation, reduction of anxiety, and diversion of attention can be explained by assuming the acoustic stimulation decreases the “gain” of pain relays upon which branches of auditory system impinge.

Other studies that used music in adjunction to electronic dental anesthesia,<sup>4</sup> local anesthesia,<sup>11</sup> and nitrous oxide–oxygen<sup>3</sup> have shown that music makes the patient more acceptable and less anxious of the treatment.

To conclude, we may say that music can be used to bring down pain and anxiety of the patient by making the procedure more comfortable and acceptable to the patient.

## Summary

Presentation of music during a dental procedure like extraction of a tooth can help the patient to overcome the obnoxious stimulus of pain and anxiety. Further research is required to confirm the relevance of this method and music in a large population. Also further study needs to be performed to understand the mechanism of this action. The result of this case report is that music can induce analgesia during uncomplicated

extraction of the lower left second premolar with prior application of a small amount of topical anesthetic over gingiva.

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### **Bios**

**Manish Bhagania** is an assistant professor at Manipal University, India. He did his postgraduation at Manipal University.

**Anirudha Agnihotry** completed his schooling at St Paul's School, Jodhpur, India, and is currently working on audio analgesia, forensic odontology, and oral cancer.