

Accessory Practices to Enhance Pain Relief from Dento-Alveolar Local Analgesia Injections

Louis ZG Touyz*

School of Dental Medicine and Related Sciences, McGill University, Montreal, Canada

***Corresponding Author:** Louis ZG Touyz, School of Dental Medicine and Related Sciences, McGill University, Montreal, Canada.

Received: October 12, 2024; **Published:** October 24, 2024

Abstract

Introduction: Operative and dento-alveolar dentistry is notorious for inducing pain. Although local analgesia injections are the mainstay to minimize pain, other simple procedures can assist in moderating pain before, during, and after dental procedures.

Aim: To itemize simple clinical procedures to optimize pain-management protocols as peri-operative, as pre-, intra-, and post-operative psychological conditioning; medication; warming the LAI carpules; vibrating local injections and post-operative patient contact as other procedures, are appraised.

Conclusion: Dentists embracing these techniques improve patient management, and reduce painful experiences at the dentist.

Keywords: Analgesia; Clinical-Protocols; Dental; Management; Pain; Psychological; Phone-Calls

Abbreviations

LAI: Local Analgesia Injection; GA: General Anesthesia; DHCW: Dental Health Care Worker; PCPMP: Practical Clinical Pain Management Protocol

Introduction

Operative dentistry embracing any procedure from scaling and prophylaxis, through tooth preparation for conservative dentistry to exodontia, is unavoidably associated with inducing some level of discomfort and pain. Historically, general anesthetic (GA, complete loss of consciousness and awareness of pain) was refined and is still used and practiced in specialty operatories. From a patients' viewpoint, cost, inconvenience, access and availability of trained personnel constrains GA use. The use of Local Analgesia Injections (LAI) as simpler, affordable and more comfortable procedures are preferable choices to control pain. Consequently, LAIs have become prevalent and are in common use. Although the use of local analgesic injections (LAI) has significantly reduced operative pain for patients, some dental health care workers enjoy better reputations for minimizing or being pain-free operators by using various other peri-operative pain moderating supportive techniques. These procedures do not apply to general anesthesia (GA.), but to practical, clinical, pain management protocols (PCPMP), to minimize pain in dentistry. Publications listing these adjuncts for LAI 's together, are exiguous.

Aim of the Study

This article itemizes simple pragmatic clinical procedures to improve pain-management protocols. Described here are: Peri-operative, as pre-, intra-, and post-operative psychological conditioning; other procedures and medication; warming the LAI carpules; vibrating local injections and post-operative patient contact.

Pre-, intra-, and post operative analgesia

Pre-operative: To minimize anxiety, often a tranquilizer, like 5 to 10 mg valium, will be given to the patient about half an hour before the appointment. To ensure the operative procedure will not be interrupted by “Nature’s Call”, patients are requested to use the washroom prior to the appointment. Before administering a local injection, the patient is asked to take a dose of analgesic pills. This may be any of a variety of pain-killers, but 500 mg paracetamol is common. Prior to administering the LAI the patient is informed that they will feel some pain but it will be minimal. Also, a minute before the LAI, some topical anesthetic ointment, like benzocaine, is applied to the targeted area where the LAI needle will be inserted. Pre-operative mouth rinse of an antiseptic (like 0.02% chlorhexidine) minimizes microbial spread. To ensure the operative procedure will not be interrupted by “Nature’s Call”, patients are requested to use the washroom prior to the appointment.

Intra-operative: A vibrating syringe (Vibraject-Patterson Dental) will stimulate proprioceptive receptors, which when activated blocks pain transmission. See figure 1.

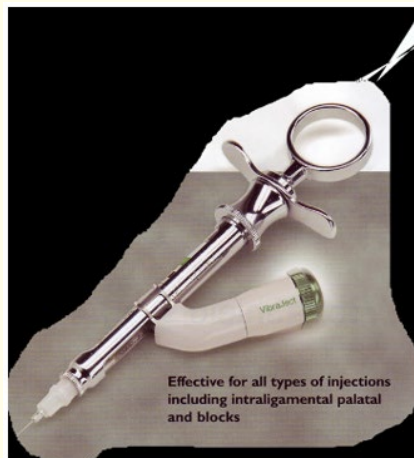


Figure 1: A 'bayonet' LAI syringe has a vibrator attached to the shaft which vibrates as the liquid is injected; the vibrations reduce pain perception during the injection.

Often the LAI carpules are stored in a fridge. The intended carpules for use should be at least at room temperature, (about 24°C) or warmer to 30°C.

Post-operative: The patient should be warned that the “freezing effect” may last awhile, before returning to normal, and that they should not chew on the soft tissue. A Rx-script can be provided for the patient to procure for pain-killers if needed. A personal-contact ‘phone call from a Dental Health Care Worker (DHCW) within 24 hours, to inquire about well-being, post-op bleeding and any other complication arising, after the procedure.... will reduce pain, reduce anxiety, discomfort and consumption of analgesics. Frequent (~3-4 hourly) post-operative saline mouthwashes reduces inflammation, consequent swelling, constrains microbial growth and debrides soft tissue residues.

Discussion

Medicated relaxed patients are more receptive to suggestion and co-operation. Most LAI's have vasoconstrictors (like epinephrine) which may accelerate renal glomerular filtration. Accordingly, it is advisable for patients to empty their bladders before starting a dental appointment to avoid mishaps or interference. The topical application of benzocaine to the targeted receptive mucosa minimizes any pain experience with the injection of LAI liquid. This is particularly effective when anesthetizing teeth in the buccal sulcus of the anterior esthetic zone. Local analgesic injections into the buccal sulcus are less painful than palatal sub-mucosal injections. The mandibular-block is deemed most uncomfortable by patients. Injecting a warm LAI solution induces less discomfort than a cold injection. The vibrating Injection is explained by the "Gate Theory", that indicates proprioceptive impulses block pain transmission with consequent pain reduction. The action of the pre-operative analgesic will be immediately active after the appointment, and assist in coping with any pain from minor inflammation arising from the operative procedure. When the patient is informed about the possibility of pain obtaining, they will make the psychological adjustment to tolerate some level of discomfort and pain, as it is expected, and is a normal healthy reaction. This comforts the patient psychologically and the patients' pain threshold is increased. Patients appreciate a post-operative reassuring call that reduces their apprehension and fear and they tend to take less analgesic medication. Delayed onset of pain is most prevalent after dento-alveolar procedures are done. Typically, pain is at it's worst 24 hours after exodontia, invasive gingival periodontal, or other dento-alveolar procedures [1-4].

Conclusion

All DHCW's, but especially dentists, embracing these PCPMP techniques will improve patient management, and minimize painful experiences deriving from oro-dental operative procedures.

Authors Statement

The author has no conflict of interests to declare.

Bibliography

1. Touyz LZG., *et al.* "Pain and anxiety reduction using a manual stimulation distraction device when administering local analgesia oro-dental injections: a multicenter clinical investigation". *Journal of Clinical Dentistry* 15.3 (2004): 88-92.
2. Touyz LZG and Marchand S. "The effect of post-op telephone-calls on pain perception in periodontal patients". *Journal of Orofacial Pain* 12.3 (1998): 219-225.
3. Evers H., *et al.* "Introduction to Local Dental Anaesthesia". Passim. Astra Mediglobe (1990).
4. Patterson Dental: Montreal, Quebec, Canada.

Volume 23 Issue 11 November 2024

©All rights reserved by Louis ZG Touyz.