REVIEW ARTICLE

The Wand Anesthesia: Pain-free Dentistry

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ABSTRACT

This article, the wand anesthesia: Pain-free dentistry, is written to provide information about this technology to the doctors as well as to the patients. This technique is useful for those patients who are afraid of an injection. It is a time-saving technology for dentists and is much comfortable than the syringe. Along with advantages, it also has few disadvantages and one of them is its high expense. As this is a syringe-free wand or pen-like device, its method is very comfortable. The result is very good as this wand performs pain-free palatal infiltrations quickly. This pain-free wand anesthesia takes dentistry to the next level. Hence, it is proved that this technique has more advantages as compared to disadvantages and it should be more frequently used by the dentists.

Keywords: Pain free dentistry, Computer assisted LA, Wand anesthesia

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INTRODUCTION

The wand computer-assisted anesthesia system builds practices by greatly improving patient satisfaction, driving increased loyalty and referrals, and differentiating the dental practice. The wand is computer-assisted system for LA. It carefully guides dental professionals as they are performing dental injections. Patients who experience this technology will find; it offers less pain and more contained numbness for the area that is being treated using single tooth anesthesia (STA).[1]

BENEFITS OF THE WAND[2,3]

Dentistry practices that use the wand offer an increased level of comfort for patients, among other benefits.

More Comfort and Less Anxiety

1. Significantly more comfortable than the syringe.
2. Greatly reduces anxiety.
3. STA eliminates collateral numbness.

More Efficient Use of Time

1. STA enables bilateral mandibular treatment in one visit.
2. Esthetic restorative dentistry procedures such as AMSA** and P-ASA** allow smile line assessment at time of treatment.
3. Go right back to work without a numb face.
   - **AMSA - Anterior and middle superior alveolar nerve block.
   - **PASA - Palatal anterior superior alveolar nerve block.

Greater Satisfaction

1. Patients are more satisfied with, and prefer, the wand the syringe.
2. More confident that their dental practice has the latest technology.

For patients

1. Patients are more satisfied, more loyal, and will refer to friends and family based on their experience.

A new marketing opportunity

1. Differentiates the dental practice and supports an innovative, high-tech image.

Less stress and more options

1. Easier on the dentist – both mentally and physically.
2. More options and more flexibility.

Increased productivity

1. Rapid onset means you can start treatment immediately.
2. A "comfort fee" can drive avenue.

Computer-regulated Flow Rates[4]

- Patented technology.
- Controls flow rate and pressure of the anesthesia during the injection.
- Three speeds – tailored flow rate for each injection type.
  1. Control Flo.

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2. Rapid Flo.
3. Turbo Flo.

Dynamic Pressure Sensing[5]

- Patented technology.
- Enables successful, virtually painless STA with no collateral numbness.
- Monitors exit pressure to ensure optimal needle position is maintained.
- Visual and audible feedback allows accurate identification of the PDL intraligamentary tissue.

The Wand Handpiece[6]

- Enables unparallel tactile control.
  1. Unique pen grasp.
  2. Feather-like weight.
- Enables birotational insertion technique, eliminating needle deflection.
  1. Increases visibility and comfort for the provider, reduces anxiety in patients.
  2. Can shorten to improve access and control.
- Wand has three components: Base unit, foot pedal, and disposable handpiece assembly.
- Base unit consists of a microprocessor and connects to the foot pedal and handpiece assembly that accepts the LA cartridge.
- LA solution from the cartridge passes through the Microbore Tubing in the handpiece assembly and needle into the target tissue.
- The slow rate is 0.5 ml/min, and
- Fast rate is 1.8 ml/min.

Multicartridge Mode

- Can use multiple cartridges with a single puncture
- Great for inferior alveolar block.

Autoaspirate

- Accurate aspiration at the exact location of the needle.
- No retracting motion, like the syringe.

Training Mode[7]

- Audible feedback to assist the learning clinician

Here's how it works

Your anesthesia will be delivered through a syringe-free wand or pen-like device that is connected to a computer. Before the tiny needle attached to the wand is inserted, the computer delivers a small amount of anesthetic so that the insertion site starts going numb before the needle enters the skin.

Once the needle is in place, the computer delivers an accurate, consistent amount of anesthesia so that you remain comfortable – typically below the threshold of pain. The computer's microprocessor automatically adjusts the injection pressure for different tissue densities, maintaining a constant, comfortable flow of anesthesia. This is important because the culprit with most injection anxiety is discomfort from anesthetic being injected too quickly, not from the needle entering the skin.

Inferior alveolar (Blocks)

1. The wand is held like a pen which allows for a birotational technique during insertion, reducing needle deflection and thus the number of missed blocks.
2. Can provide multicartridge anesthesia with a single injection.

Supraperiosteal (Infiltrations)

1. Controlled flow rate ensures the fluid pressure of the injection is below the patient's pain threshold.

Various studies concerning the use of wand[8]

Author	Sample size	Age group	Site of injection	Finding concerning usefulness of wand
Gibson *et al*., 2000	62	5–13 years		Significant less disruptive behavior
Allen *et al*., 2002	40	2–5 years		Significant reduction
Primosch and Brooks, 2002			Palatal injection	Significant reduction
Ram and Peretz, 2003	102	3–10 years		No significant reduction in pain and distress
Palm, 2004	33	7–18 years	Mandibular nerve	Significantly less painful
Klein *et al.,* 2005	21	3–5 years	Maxillary anterior segment P-ASA	CompuMed device caused significantly less disruptive behavior
Ram and Kassirer, 2006	138	24–24 months	Compared P-ASA, PDLi	Better behavior than conventional block infilt ration
Versloot *et al*., 2008	147	4–11 years	Infiltration	No significant reduction in pain and distress
Yesilyurt *et al*., 2008	40	18–30 years	Inferior alveolar nerve	Significantly lower pain scores
Tahmassebi *et al*., 2009	38	39–120 months	Maxillary local analgesia	No significant difference in the level of pain and anxiety
Kandiah, 2012	30	8–16 years	Maxillary infiltration	No difference in pain infiltration

P-ASA: Palatal anterior superior alveolar nerve block

Some Advantages of Using an Anesthesia Wand[9,10]

1. One of the most important advantages is that it does not look threatening, as it eliminates the initial anxiety on seeing a syringe.
2. It can be used in conjunction with other conscious sedation methods (i.e., nitrous oxide) for a more comfortable treatment.
3. It provides painless injections for all routine dental treatments including root canals, crowns, fillings, and cleanings.
4. With the wand, you will receive a more consistent and comfortable injection, especially in more sensitive areas such as the front of your mouth or in your palate (roof of your mouth) where tissue is less elastic.
5. Due to the wand's pen-like grasp, it is easier to handle, rotate, and accurately glide the wand into precise, hard-to-reach places to deliver anesthetics.
6. Last but not least, many people who previously experienced a fear of injections are able to overcome their fear after the first use. This provides them with a better, less stressful dental experience.
7. The cross-infection control is much simpler and the resheathing becomes very effective, reducing the possibility of needlestick injury.
8. This wand has proved very cost-effective. It reduces dependence on sedation and general anesthesia.
9. This wand performs pain-free palatal infiltrations quickly.
10. It uses a prepuncture technique which enables orthodontic extractions with much less anxiety and makes the procedure very simple and comfortable.

Disadvantages of Wand Anesthesia

1. More expensive than a normal injection.
2. Takes longer than a normal injection.
3. Sometimes seen as unnecessary as it produces the same result as a normal local anesthetic injection.
4. Difficult to find dentists who use the wand due to it being a very new technique.

Dental patients everywhere have one thing in common: Most people do not like anesthetic shots. In addition to being intimidating and painful, most patients have to endure multiple shots to numb the tooth or teeth in question – an ordeal that is almost worse than the procedure itself.

To make the process of getting dental care more comfortable, our practice has transitioned to the wand STA a system. Instead of numbing the entire area around your damaged tooth with large, intimidating syringes, the wand discreetly numbs the individual tooth dentists need to work on. The Wand STA system is also unique because it delivers a computer-controlled flow of anesthesia rather than one large, stinging injection, creating a more comfortable numbing experience.

State-of-the-Art Design[11,12]

The wand component of the STA system looks like a small pen with a cord attached to it. At the tip of this wand, there is an extremely small needle that is used to deliver the anesthesia. Since the wand looks so benign, it is perfect for patients who are nervous about shots and needles, such as children who have not had much practice with injections or adults and teens with dental phobias or anxiety.

As your dental excellence dentist works on your teeth, they can control the flow of anesthesia to keep you as comfortable as possible. The wand delivers the medicine at precisely the right rate for the tissue density of the area, offering patients the pain relief they need immediately. In fact, most patients report that injections with the Wand STA system are completely painless.

No Collateral Numbness[8,9]

One of the biggest benefits of the Wand STA system is the fact that only the damaged tooth or teeth are numbed, instead of entire sections of the mouth. This makes it possible for patients to work or school immediately after appointments, without worrying about how they will look, talk, eat, or drink. The localized numbness is much easier to manage than a more widespread effect, so you can get back to your life more easily.

CONCLUSION

This pain-free wand anesthesia takes dentistry to the next level. It is a computer-assisted system for LA. It is agreat help to the doctors as well as to the patients, the patients who are afraid of an injection find this technology very friendly and suitable. This technology saves so much of time and is more comfortable than the syringe. This wand has a pen-like grasp, and therefore, it is very easy to handle, rotate, and accurately deliver the anesthesia in the required area. Some dentists do not use it as it is a very new technique and they feel that it is unnecessary to use this wand as the normal local anesthesia also produces the same results, but on seeing the advantages of this wand, more and more dentists should try using it as it is a very latest pain-free technique and is very patient friendly and is giving dentistry a new boost up.

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