

Licensing and Technology Transfer Opportunity: Manipal University

Title of Technology Available: AN ADAPTER DEVICE AND METHOD FOR CONVERTING STANDARD DISPOSABLE SYRINGE INTO AN ASPIRATE SYRINGE (Utility Patent Application)

Brief Description of Invention:

Using a standard disposable syringe, it is difficult to pull back (aspirate) on the plunger with just one hand. To perform aspiration, clinicians, particularly those less-experienced, must release the oral soft tissues which they have been retracting with their other hand. With our novel invention, the Syringe Ring is easily and quickly attached to lock onto the end of the syringe plunger, making it identical to a self-aspirating syringe. Then the clinician can simply insert the thumb into the syringe ring and can easily pull back on the plunger to aspirate. After performing aspiration, the clinician can push the plunger which injects the local anesthetic drug into the oral mucosa. This novel Syringe Ring can be easily removed, reused or disposed off safely.

Brief Background of Invention:

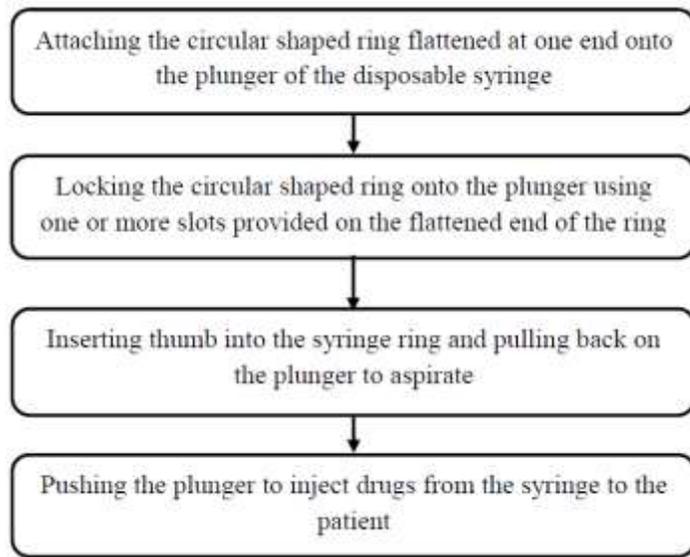
During dental procedures which require local anesthesia, the clinician needs to perform aspiration before injecting the local anesthesia. For aspiration, the clinician must first inject the needle tip at the required site and then pull back on the plunger of the syringe. After achieving proper aspiration, the clinician then pushes the plunger of the syringe which injects the local anesthesia at the required site. This process of aspiration is quite difficult to perform with the use of just one hand. Because of this, more problem is faced by the dentist-trainees. They have to use their other hand also for aspiration. If they use both the hands for performing aspiration, then they lose the sight of injection because they have to let go of the retracted oral soft tissues which they have been holding with their other hand. Our novel invention helps the clinician to perform aspiration with the use of just one hand.

Describe the final product:

The various embodiments of the present invention disclose an adapter device and method for converting an ordinary syringe into an aspirating syringe. The adapter device comprises a circular shaped ring flattened at one end. One or more slots are provided onto the flattened end of the circular shaped ring that are configured for affixing and locking the circular shaped ring onto a plunger of the ordinary syringe. The adapter device is configured for enabling the clinician to insert thumb into the syringe ring to pull back the plunger to aspirate. After performing aspiration, the clinician pushes the plunger which injects the drug. This syringe ring is easily removable, reusable or in some cases is disposed off safely adding an additional level of security for the patients. The self-clamping design of the adapter device makes it easy to attach and lock onto the plunger of standard disposable syringes.

Technological Domain (Keywords):

Healthcare, Dentistry, Syringe, Aspiration, Medical device

Proof of Concept:**Stage of Development:**

Prototype

Provide Information on Competitors who manufacture and/or sell similar products:

N/A

What are the unique advantages your innovation has compared to the competition:

- a) A simple, inexpensive ring with customized slots that quickly and easily locks onto a standard disposable syringe and converts it into a self-aspirating syringe, functionally equivalent to an expensive metal, self-aspirating syringe.
- b) Using this novel Syringe Ring invention and its easy method of attachment, aspirations become very simple for the novice doctor-trainees, as well as the experienced professional clinicians.
- c) The **cost** of this novel Syringe Ring adapter is very minimal compared to the expensive metallic self-aspirating syringes. It is because of the high cost of these self-aspirating syringes, they are not used in India and doctors make do with standard disposable syringes and expose patient to unnecessary re-do of mucosal punctures.
- d) This novel invention can be manufactured in a variety of materials including metals such as stainless steel, titanium and its alloys, various polymers, ceramics or other composites, in a variety of sizes to fit any type of syringe, or customized for thumb size, can be either sterilizable and reused or disposable.

A few potential companies who might be interested in this technology:

Companies which manufacture disposable syringes

Intellectual Property Status: Indian Patent application with number:

201841046615 (Utility Patent) filed on December 10, 2018