

Aspiration Problems in Current Aspirating Syringes

Although the current aspirating dental syringes offer valuable aspiration features, there are other reasons which can give a false negative aspiration result. It has been argued that using a smaller needle than the 25 gauge needle may not give positive aspirations consistently. Some recommend aspirations in at least two planes before injection. If the bevel of the needle presses against the wall of a blood vessel, aspiration in that plane may not work. Or when too much force is exerted during aspiration, the blood vessel wall may collapse, and it may result in a false negative aspiration.

Because of constant uses, the harpoon may get dull and does not engage the rubber backing of the cartridge firmly. During injection, there can be an accidental separation of the harpoon from the cartridge during aspiration, the operator may not be able to aspirate prior to injection.

For many patients, intraoral injection is widely perceived as the single most stressful procedure encountered in routine dentistry. Psychogenic reactions to intraoral injection include pallor, sweating, nausea, headache, palpitations, hyperventilation and syncope. With such, **severe emotional responses from the patients, it is often difficult for the operators to stay calm. The most common reason for the accidental injection of the anesthetics into the bloodstream is that the operators simply forget to aspirate.** Having a safety back-up system, like the self-aspiration feature, will reduce the rate of accidental injection into the bloodstream and reduce catastrophic results.

The self-aspiration feature should not be used as a substitute for manual aspiration but as an adjunct feature. The self-aspiration feature can remind the operators to aspirate by noticing bouncing plunger or reveal blood in the cartridges. The self-aspiration is an additional safety back-up mechanism when the manual aspiration fails in certain circumstances.