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Suture Selection for Wounds in the Oral Cavity

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Suture is often used to close wounds following dental extractions, biopsies or other oral surgical procedures. Suture that is rapidly absorbed is generally preferred to avoid the need for removal. Non-absorbable suture causes more irritation from food and bacteria that accumulate around knots and often requires sedation or anesthesia for removal and is not recommended for the veterinary patient.

Suture selection is based on the following criteria: it is absorbable, it has appropriate tensile strength retention, it is a size that fits the patient, and the needle shape is easy to insert through both sides of the tissue.

The 3 absorbable suture materials most commonly used in the oral cavity of the dog and cat are poliglecaprone, polyglactin 910 and chromic gut.

Monofilament suture (poliglecaprone)

Poliglecaprone (e.g. Securocryl[™], Monocryl[®]) is often a preferred suture material for the oral cavity because it has less tissue drag, less tissue reactivity and is rapidly absorbed compared to many other absorbable sutures. It is important to use five to six throws on a knot to prevent the suture from



untying. Suture tags are left long to resist untying and to provide more comfort when using this monofilament suture. The suture persists in the tissue for three to four weeks. Polydioxanone (Securodox[™], PDS[®], etc) is NOT recommended in the oral cavity because it persists in the tissue for months as opposed to weeks.

Braided and twisted suture (polyglactin 910 and catgut)

Polyglactin 910 (e.g. Securosorb[™] Quick, Vicryl Rapide[™]) and chromic gut are good choices for the oral cavity. The rapid hydrolysis of the polyglactin 910, and the phagocytosis of chromic gut make them suitable suture materials. Polyglactin 910 is braided and chromic gut is twisted. They have the negative properties of wicking and tissue reactivity that are offset by their rapid dissolution in one to two weeks compared to poliglecaprone (e.g. Securocryl[™], Monocryl[®]) which persists for three to four weeks.



Needle selection

Taper and reverse cutting needles are both used in the oral cavity. Needle selection is a personal preference as is selection of the suture material. The advantages of

the reverse cutting needle are that they remain sharp throughout the procedure and the cutting edge of the needle is oriented away from the gingival margin making it less likely to cut the tissue when under tension. The taper needle makes a smooth excursion through the tissue and is less traumatic, but the tip of the needle may dull rapidly requiring an additional pack of suture material.

Needles are either 1/2 round or 3/8 round and are of different sizes. The 1/2 round has a tighter curve than the 3/8 round needle, which requires more wrist action to move from one side of the tissue to the other. It is more commonly used in cardiovascular surgery.

Suturing

It is necessary to accurately appose the gingival and mucosal tissue. Care must be taken not to invert, overlap or evert the tissue. When the tissue is inverted, epithelial surfaces face each other, and the tissue will not heal. The goal is to appose the edges of the tissue to promote healing.

The most common suture pattern used in the mouth is a simple interrupted pattern. A simple continuous pattern can be used in a straight-line defect where there are no vertical releasing incisions.

With dental extractions, a mucogingival flap is created, the tooth removed, and the tension released on the flap. The tissue is apposed to cover the defect. The flap can be closed with 4-0 poliglecaprone, polyglactin 910 or chromic gut using a 3/8 round (or 1/2 round) reverse cutting needle in a simple interrupted pattern. 5-0 suture is used for the feline patient. It is important to suture the gingival edge of the flap first. Once those sutures are in place, the mucosa can be sutured from the gingival edge to the mucosal base of the flap.

By making a flap and suturing it over the defect, a blood clot will remain in the alveolus. This will keep the bone moist and prevent a dry socket. The patient will return to function sooner and have more postoperative comfort than allowing the tissue to heal by second intention.

