Suture Lab Guide
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1. **Wound cleansing:** irrigation best method, do not destroy tissue with pressure from cleansing. Be sure to irrigate H202 completely out of tissue because of H202 is tissue toxic. Be sure to irrigate all cleansers from the tissue for the same reason.

2. **Anesthetic:** lidocaine 1% lasts approx. 1 ½ hrs. Sensorcaine 0.5% lasts approx. 4-6hrs. May buffer both with bicarb at a 1:9 ratio. Bicarb will precipitate out of solution in the sensorcaine – no gross contra-indication to using in this manner yet, most of us may not use. Epi - Be careful were the epi is used, i.e. fingers, nose, ears, and toes…If someone is allergic to lidocaine, bupivacaine, novacaine – it is possible to use – IV injectable benadryl in the same manner as the other local anesthetics (soft tissue injection). LET gel (lido, epi, tetra – caine) may be used as a pre-anesthesia. Ethyl chloride may be used as a pre-local anesthesia. Ethyl Chloride is extremely flammable – do not use with electro cautery device.

3. **Tissue Planes:** The key to good symmetrical closure is tissue approximation. All layers are to match; this decreases the external defect. The edges of the approximated tissue are to be slightly everted. Inverted tissue will cause a greater external defect as well as possibly cause wound dehiscence.

4. **Needle driver:** Never “claw” handle the driver. The driver may be “palmed”. The driver should be held with the pads of the fingers with the forefinger (2nd finger) extended to add stability to the tip of the driver. Use a supporting finger on top of the driver shaft (approx. in the middle of the shaft) to add stabilization to the needle in the driver jaws.

5. **Needles:** There are different types of needles. Cutting, spoon shaped, non-cutting, and straight. These are some of the needles available. Cutting and spoon shaped needles are two of those used in the Emergency Department most frequently. Spoon shaped or “platypus” tipped needles are for suturing banded or striated tissue such as, finger and toe nail bed tissue. The larger the number in needle size – the smaller the needle. Generally, use the largest needle that is practical for the task at hand. Obviously, a p-3, p-1, pc-1 is used for suturing the face. A ps-2 used on the face may be too big and cause a greater defect. In the same light, a pc-1 may be too delicate for certain forehead facial tissue or other parts of the body. Choose the needle for the tissue about to be approximated. Always consider location and tissue type and well as the task at hand - keeping in mind the end result and the patient’s best interest. **The needle** – the proximal aspect where the suture is attached is called the Swage. The distal end has the Tip. If at all possible – never grasp the needle by the tip (instruments or fingers). The shaft has a mid-point curve. The needle drive should grasp the needle in the region of the proximal 1/3 of the needle (distal to the swage and proximal to the mid-point curve).

6. **Suture:** Suture that loses its tinsel strength in less that 60 days are considered absorbable. **Plain gut** – the strength is gone by 7-10 days and is absorbed by 70
days. **Chromic Gut** – the strength is gone by 10 – 14 days and is absorbed by 90 days. **Vycryl Rapide** – the strength is gone by 10 -14 days and is absorbed by 24 days. **Monocryl** – 50% of its strength is gone at 7 days, strength gone completely at 21 days and it is absorbed by 90 days. **Coated Vycryl** – 75% of its strength is gone at 14 days, 25% of its strength is gone at 28 days and it is absorbed in 56-70 days.

7. **SubQ Closure:** Dirty wounds – even after copious irrigation, avoid running subq – use interrupted, this allows for drainage. Gut = less tissue reaction than vycryl which probably gives better cosmetic result. Always line up tissue planes.

8. **Suture Size Selection:** Generally, 6-0, 7-0 for eye lids. 6-0 for face. 5-0, 4-0, 3-0 for Scalp. 3-0, 4-0, 5-0 for arms and legs. 4-0, 5-0 for hands and feet. Always consider cosmetics and tinsel strength when choosing suture.

9. **Entering the Tissue with the Needle:** Enter the tissue at a 90 degree angle and follow the curve of the needle around to prevent distortion of the needle shaft and curve.

10. **Documentation:** Mechanism, Location, Length, Depth, Complexity, Method and type of closure, Number of sutures/staples.