Advanced Wound Closure Techniques

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On the front lines:
We are the experts in wound closure.

Goals of this talk

1. Make life easier for you with “tricks of the trade” in wound closure.
2. Review recent literature in wound care.

Case 1
A 78 year old woman sustains an arm laceration.

Use steristrips to strengthen skin wound edges in combination with sutures.


Case 2
35 yo man presents after being assaulted to the head
Case 2
Have I missed any additional scalp lacerations?
1. Adequate visualization using bright LED flashlight

2. Manual palpation of the scalp

Case 2
You find and repair 3 scalp lacerations with staples. You suture the ear laceration.

How do you prevent an auricular hematoma?

Traditional teaching: Gauze in antihelix.

Trick of the trade: Make a plaster splint.
Case 2
How do you prevent an auricular hematoma?

Trick of the trade: Make a plaster splint.

Case 2
How do you apply a pressure dressing on the head?

Traditional teaching

Thanks to Dr. Eric Silman
(Chief resident, UCSF-SFGH)
Case 2
How do you apply a pressure dressing on the head?

Trick of the trade: Beanie hat

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Case 2
Can I close scalp lacerations without staples?

Trick of the trade: Beanie hat
**Case 2**

Can I close scalp lacerations without staples?

**Modified Hair Apposition Technique (HAT trick)**

- Uses opposing hair strands & adhesive
- One full 360° revolution twist of hair
- Apply adhesive at twisting point
- Repeat this along length of wound
- Do NOT over-twist the hair.
- Do NOT tie a knot.

**Contraindications to the HAT trick:**
- Laceration >10 cm long
- Grossly contaminated wounds
- Active bleeding from the laceration
- Significant wound tension
- Hair strands <3 cm long

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**Case 2**

Speaking of tissue adhesives, how can I prevent tissue adhesives from “running” into undesired areas?

- Use Trendelenberg or reverse Trendelenberg
- Use petroleum-based gel as a barrier.
- Use a tegaderm tape as a barrier.

Thanks to Dr. Hagop Afarian (Fresno-Community Regional Medical Ctr)
Case 2
Speaking of tissue adhesives, how can I prevent tissue adhesives from “running” into undesired areas?
Use a tegaderm tape as a barrier.

Case 2
What are other uses of tissue adhesives?
Securing an avulsed fingernail or toenail.

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Case 2
What are other uses of tissue adhesives?
In combination with steristrip tapes, can close wounds under slight tension

Case 2
What are other uses of tissue adhesives?
In combination with absorbable sutures, can close wounds under slight tension or inverted

Thanks to Dr. David Carr (University Health Network in Toronto)

Trick by Dr. Jonathan Davis and Dr. Matt Borloz (Georgetown/ Washington Hospital)
Case 3
25 y/o man presents with a forearm laceration.
How would you close the wound?

Horizontal mattress sutures for wounds under tension

For LONG wounds under tension, steristrip rest of wound to temporarily relieve tension while sutureing
Case 3
25 y/o man presents with a forearm laceration.

How would you close the wound?

A bit too much tension!

Case 3
25 y/o man presents with a forearm laceration.

How would you close the wound?

Trick:
Alternate horizontals with simple interrupted sutures

Case 4
15 y/o boy presents with a forehead laceration.

How would you close the wound?

Use corner sutures whenever possible

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15 y/o boy presents with a forehead laceration.

How would you close the wound?

Use corner sutures whenever possible

Case 5
40 y/o man crashes his motorcycle and injures his hand

How would you check for non-radioopaque foreign bodies?
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How would you check for non-radioopaque foreign bodies?

Use the ultrasound water bath technique


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Case 5
40 y/o man crashes his motorcycle and injures his hand

His index finger laceration keeps oozing. How can you achieve better hemostasis?

Make a glove “ring”
Transfer to patient’s finger

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Case 5
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How would you bandage the finger?

“The Digi-Spec”
Wrap finger with cotton tubular gauze using pelvic speculum.

Thanks to Tina King, NP (SFGH).
**Summary**
Novel approaches and tips in wound closure

- Suturing fragile skin
- Bright light source
- Palpating the scalp for lacerations
- Auricular hematoma packing
- Beanie hat
- Modified HAT trick
- Adjuncts with tissue adhesives
- Horizontal mattress suture
- Corner suture
- Ultrasound water bath for FB
- Glove ring for hemostasis
- Digi-Spec finger bandage