CEN: Bites, Exposures and Wound Care

Pit viper and coral snake envenomation, which animal bites carry rabies risk, macaque B virus, community needlesticks, foreign bodies and fishhooks, diabetic foot punctures, fingertips and replantation, and what the Braden scale scores

ICU Basics
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PIT VIPER OR CORAL SNAKE

FEATURE	PIT VIPER (RATTLESNAKE, COPPERHEAD, COTTONMOUTH)	CORAL SNAKE
Venom does	Swelling, tissue injury, coagulopathy (platelets often fall first)	Neurotoxic: ptosis, diplopia, dysphagia, weakness, respiratory paralysis
Bite site	Swelling within 30-60 min; about 25% of bites are dry	Little or no swelling, even when venom was injected
No signs yet	Observe at least 8 h; repeat platelets, PT, fibrinogen, Hb before discharge	Admit: hourly neuro checks for at least 24 h (signs as late as 13 h)
Antivenom	For signs of envenomation, never for a bite alone	At the first neurotoxic sign; not prophylactic (label)

SAFETY No tourniquet, ice, incision, suction or pressure wrap for pit vipers. Rings off, limb loosely splinted near heart level.

PIT VIPER ANTIVENOM STEPS

- Mark the leading edge of swelling and tenderness every 15-30 min; baseline CBC, PT, PTT, fibrinogen.
- First dose 4-6 vials (8-12 for shock or serious bleeding) in 250 mL saline; slow for the first 10 min, then over about 1 h. Children get the same dose.
- Recheck labs within about 1 h. Initial control means swelling stops, labs trend better, systemic signs resolve.
- No control: repeat the same loading dose. Two doses fail: toxicologist or poison center.
- After control: 2-vial doses at 6, 12, 18 h on the label (the 2011 algorithm leaves them to expert advice).
- Fasciotomy only after measured compartment pressures and antivenom; swelling alone is not an indication.
- Hives, wheeze, hypotension: stop the infusion, epinephrine; restarting is an expert call.
- Discharge after coagulopathy: bleeding can return for 1-2 weeks or more; labs at 2-3 and 5-7 days; report bruising, gum or urine bleeding, late rash.

ANIMAL EXPOSURE: RABIES AND B VIRUS

ANIMAL	PLAN
Squirrel, rat, mouse, hamster, gerbil	Not rabies reservoirs, never known to infect people: wash, tetanus, ask public health
Woodchuck (groundhog)	Most rodent rabies: public health decides on PEP
Raccoon, skunk, fox	Possible exposure: PEP unless the animal tests negative
Bat	Full evaluation; PEP unless the bat tests negative
Healthy dog, cat, ferret	Observe 10 days (wild animals are not observed)
Macaque bite or scratch	B virus: 15-min wash now, then antiviral

- B virus: skin washed 15 min with povidone-iodine, chlorhexidine or detergent soap; eyes and mucosa flushed 15 min with saline or water. Cultures after cleansing.
- Deep puncture, head, neck or torso wound, or poor cleansing: valacyclovir 1 g every 8 h for 14 days. Report fever, headache, blisters at the site.
- Rabies PEP doses and the tetanus grid: CEN Musculoskeletal and Wound.

NEEDLE FOUND IN THE COMMUNITY

- HIV PEP is for substantial-risk exposures, started within 72 h for 28 days; unknown source is case by case.
- Discarded needle: no transmission reported, dried blood loses 90-99% of HIV; PEP rarely advised.
- Hepatitis B: documented complete series needs nothing more; unvaccinated starts the vaccine, ideally within 24 h.
- Baseline HIV, hepatitis B and C tests; wash; tetanus as for a puncture.

FOREIGN BODIES AND FISHHOOKS

MATERIAL	BEST FIRST TEST
Glass (all radiopaque), metal, gravel	Plain films, several views; may miss glass under 2 mm
Wood, thorns, plastic	Ultrasound; plain film often normal
Suspected metal	Avoid MRI

- Film before closing a glass wound: the patient feeling nothing does not exclude a shard.
- Barbed hook, point just under the skin: anesthetize, advance the point through, cut the barb, withdraw. Back-out only for barbless hooks.
- Irrigate with saline or tap water, not antiseptic soaks. Puncture wound: tetanus if the last dose was 5 or more years ago.

DIABETIC FOOT AFTER A PUNCTURE

IWGDF/IDSA GRADE	FINDINGS
Mild	Local signs, erythema under 2 cm, skin and subcutaneous only
Moderate	Erythema 2 cm or more or deeper tissue, no systemic signs
Severe	Two or more SIRS signs (T over 38 °C or under 36 °C, HR over 90, RR over 20, WBC abnormal)

Severe: consider admission, IV antibiotics at first, glucose control. Foot films for every new infection (bone, gas, retained object); MRI if osteomyelitis is in doubt. Culture tissue, not a swab.

FINGERTIPS AND REPLANTATION

INJURY	PLAN
Pad loss, bone not exposed	Dressing, heals in 2-4 weeks; under age 6 the tip may keep growing normally even if bone was exposed
Thumb, several digits, a child	Classic replant indications
Single finger proximal to the FDS insertion; a little finger	Least likely replant (relative contraindication)
Crush or avulsion, 3 or more comorbidities	Worse replant results; sharp cuts do best

BRADEN SCALE: HOW IT IS USED

- Six subscales: sensory perception, moisture, activity, mobility, nutrition (usual intake), friction and shear. Lower total means higher risk.
- Not scored: age, albumin, hemoglobin, diagnoses such as diabetes. Weigh them with the score.
- Each low subscale points to its own fix: incontinence care, turning, nutrition referral.

Sources (19) are listed with links at icubasics.com/sheets/cen-bites-exposures-wounds.html. For education and exam preparation only. Not medical advice; follow current guidelines and your institution's protocols. ICU Basics is an independent study aid not affiliated with any certifying body.