Disclosure Statement

► I have nothing to disclose.
Hopi and Navajo Reservations

Village of Old Oraibi
Wild West Medicine

- Dallie Thumb
- Rattlesnake Bites
- Hantavirus
- Jimson Weed Overdose

Dallie Thumb

- Anglicized version of Spanish
dar la vuelta
to go around or turn over
Dallie Thumb

- Rope loops out when thrown
- Line extends out over thumb
- Traps thumb between line and saddle horn

Dallie Thumb

- Complete avulsion in distal aspect of digit
- Crush/burn injury—damages all tissue
- DIP gone—can avulse at joint
- Possibility of reattachment?
Dallie Thumb

- Check the bone
- Rongeur sharp surfaces of distal end
- If skin is left, do flap

4-6 weeks for recovery
- Infection
- Dehiscence
- Osteoarthritis
- Decreased vascular supply
- Necrotic tissue
- Hematoma
Prognosis

► Adjust team rankings
► Handicap—as in golf
► Don’t rope during healing
  ▪ Pain/tenderness
  ▪ Hyperesthesia
Snakebite

- 48,000 snakebites annually
- 40% - no venom passed
- 85% - if venom passes, pt becomes ill only
- 15% - fatal

“Don’ts”:
- Tourniquet
- Cut and suck
- Cryo
- Antibiotics
Pit Vipers

► Diamondback Rattler
► Hopi Rattler
  ▪ Two fangs
  ▪ Pit between eyes and nose
  ▪ Triangular head
  ▪ Ventral side scales non-divided

Rattlesnake

► Size is important
  ▪ 4 to 6 feet
  ▪ Record: 8ft ½ inch and 20 pounds
Rattlesnake bite

► 40%—No venom is passed

► Watch and wait...

Symptoms

► Pain
► Swelling
► Ecchymosis
► Discoloration/ Vesicles/ Blebs
► Oozing blood
► Metallic, rubbery taste
Symptoms

► Systemic weakness / fatigue
► Confusion
► Nausea / vomiting
► Numbness / tingling
► Hypotension
► Prolonged Bleeding / clotting times

The Bitten

► Mostly <20 yo
► Male>Female 2:1
► ETOH
► Usually around the home
► 20% of bites—occur while trying to kill or handle snake
Work Up

► Vitals
► 2 large bore IV’s
► Remove watches, rings, bracelets, neck chains
► Allergy history
► CBC/ CMP / PT-PTT
► Mark with pen (time)
► Tetanus
► Meperidine for pain

Antivenom

► Two Types:
  Wyeth
  CroFab
Antivenoms

► Wyeth—Antivenin (Crotalidae) Polyvalent
► @1954
► Horse serum
► 40% reaction rate:
  ▪ Solumedrol
  ▪ Benadryl
  ▪ Beta agonist

Wyeth Antivenom

► Eastern Diamondback
► Western Diamondback
► South American
► Bushmaster
CroFab

- Crotalidae Polyvalent Immune Fragment Antigen (Fab)
- @2000
- Sheep serum
- Purer
- Anaphylactoid

CroFab

- Eastern Diamondback
- Western Diamondback
- Mojave
- Cottonmouth
CroFab

► 4-6 vials in 250 ml NS
► 1 gram Ab in NaPO4 buffer
► Infuse slowly over 10 minutes

Repeat at 6/12/18 hours

CroFab Contraindications

► Dry bite
► Reaction to CroFab
► Reaction to sheep
► Allergy to Papain—papaya
► Allergy to Pineapple—bromelain enzyme
Follow Up

► 2-3 days later:
  ▪ Repeat coagulopathy

► 1 – 3 weeks later:
  ▪ Repeat coagulopathy
  ▪ Serum sickness
    ► Fever, arthralgias, lymphadenopathy,
    ► Urticarial rash
    ► Tx: Steroids

Hantavirus

► Bunyaviridae Family of viruses

► Hantan River (Korean hemorrhagic fever)
► Hanta Virus with Renal Syndrome
Hantavirus

► 1993-new species
  Hantavirus
  Cardiopulmonary Syndrome

AKA Sin Nombre virus
New Mexico and 4 corners
States

From 1993 to July 2016 - 8 States with 30 or more cases
Hantavirus

- Source: infected rodents
  - Urine
  - Droppings
  - Saliva

  Humans breathe in aerosolized virus

Vectors

- Deer Mouse (peromyscus maniculatus)
- White Footed Mouse (peromyscus leucopus)
- Cotton Rat (sigmodon hispidus)
- Rice Rat (oryzomys palustrics)
Hantavirus

Not transmitted by:
Person to person
► Healthcare provider
► Kissing, touching
► Animals or insects
► Blood transfusions
► Pet store animals—rats, gerbils, etc

Incubation time is 2-4 weeks in humans then:
► Five Phases of illness
  1) Febrile phase  3-7 days
  2) Hypotensive phase  2 days
  3) Oliguric phase  3-7 days
  4) Diuretic phase  several weeks
  5) Convalescent phase
Signs / Symptoms

► Prodrome 3-5 days
  ▪ Fever, chills, myalgias
  ▪ Tachypnea, tachycardia

Analysis

► ELISA—IgM
► IgG
► Western blot
► RIBA (rapid immunoblot assay)
Work Up

- CBC q8 hrs
- Serum albumin
- Hematocrit
- WBC (50 %) with left shift
- Platelets < 150,000
- Xray findings

Radiographic Progression of HPS in the Lungs

May 27, 1993
May 30, 1993
May 31, 1993

Source: Dr. L. Ketai
Treatment

- Supportive
- Broad spectrum abx
- Antipyretics
- Analgesia

Hantavirus

- Ribavirin—no effect
- (Even though it helps HFRS)
Treatment

- ICU
- Careful monitoring
- Fluid balance
- Electrolyte balance
- Blood Pressure
- Supplementary O2
- Intubation / ventilation

Jimson Weed

- Datura stratuonium
- Night shade family
- One of “belladonnas”
- Used to treat asthma and colds
Jimson Weed

- Jamestown Weed, Jamestown, VA 1676
- Locoweed, Angel’s trumpet, Thornapple,
- Devil’s trumpet
- Found in cornfields, roadsides

- Horseradish
- Gardener’s mydriasis
- Corn picker’s pupil
Jimson Weed

- Annual plant
- Lobed leaves
- Pod
- 50-100 seeds = 3-6 mg

Forms

- Seeds
- Tea
- Cigarettes
Anticholenergic Properties

► Hot as a hare
► Red as a beet
► Dry as a bone
► Mad as a hatter

Overdose

► Coma
► Respiratory arrest
► Seizures
Diagnosis

► AST, LDH, bilirubin, PT
► Urine – rabbit eye

Management

► ABC’s
► Dextrose, thiamine, naloxone
► Sedatives, B-blockers
► Foley catheter
► Cooling blanket
► Decontamination
  ▪ Lavage, charcoal
Sources

► Erowid: Jimson weed Poisoning Clinical Toxicology Review, Amy Arnett, MD Boston Children’s Hospital, December 1995, volume 18 (No.3)
► Poison Control  502-626-6016 or 800-222-1212, Certified Specialist
► Rodeo.about.com/cs/glossary/g/gdallie.htm
► Hall, Jurgen, FNP- interview at Hopi Healthcare Center, Polacca, AZ 08/2009
► Graziano, Kristin L, DO, Hantavirus Pulmonary Syndrome: A Zebra Worth Knowing in American Family Physician, September 15, 2002
► Moneim, Moheb S., MD et al., Thumb Amputations from Team Roping in American Journal of Sports Medicine, September,2003 Vol.31/no.5 728-735
► www.cdc.gov/ncid/diseases/hanta

Thank You!!

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