

FIRST AID ON THE FLIGHT LINE

ANNETTE CHAVEZ FOUNTAIN, MD, FACS

Assistant Chief Surgery, Kaiser Santa Clara

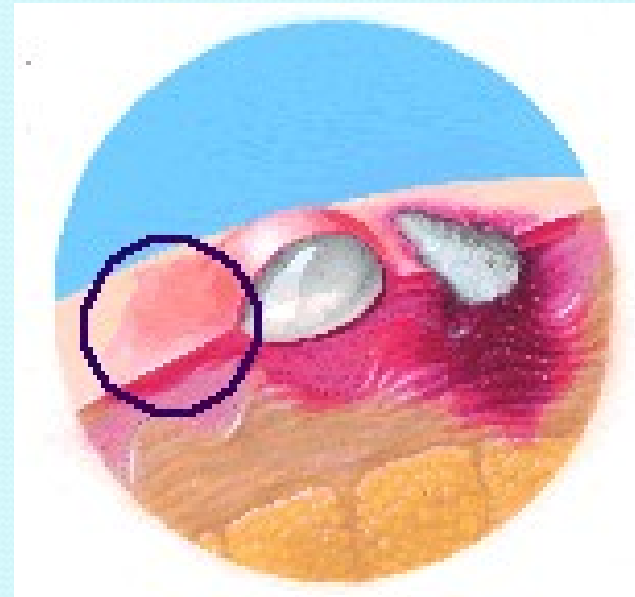
Clinical Associate Professor of Surgery, Stanford
University

Today's Topics

- Sunburn
- Overexposure and Skin Cancer risk
- Dehydration
- Heat Exhaustion
- Heat Stroke
- Treatment of Minor Injuries
- When to call 911
- Q&A Session

SUNBURN

- Usually first degree
- Rarely second degree
- Never third degree
- Worse 24-48 hours after exposure
- Home treatments-cool baths with baking soda followed by application of lubricating lotions or cream
- Acetaminophen or Ibuprofen
- Heal in five days
- If a large surface area is affected or in child or elderly seek medical attention
- Risk factor for skin cancer



SKIN CANCER

- Greater than 1 million cases of nonmelanoma skin cancers diagnosed annually.
- Melanoma approx 60,000 cases diagnosed per year.
- 10,000 deaths annually, 80% from melanoma.
- Squamous cell carcinoma-metastatic spread
- Basal Cell Carcinoma- local spread

RISK FACTORS FOR SKIN CANCER

- Unprotected and/or excessive exposure to ultraviolet (UV) radiation
- Fair complexion
- Occupational exposures to coal tar, pitch, creosote, arsenic compounds or radium
- Family history
- Multiple or atypical moles
- Severe sunburns as a child

Detection of Skin Cancer

- Any change in the skin, especially in the size or color of a mole or other darkly pigmented lesion or a new growth
- Scaliness, oozing bleeding or change in the appearance of a growth or nodule
- The spread of pigmentation beyond its border
- A change in sensation, itchiness, tenderness or pain.

Prevention of Skin Cancer

- Avoid the sun between 10am and 4pm
- Seek shade-shadow rule
- Protective light colored clothing
- Use sunscreen and lip balm with SPF15 or higher if you are going to be in the sun for greater than 15 minutes.
- Hat
- Sunglasses with 99%-100% UV absorption
- Avoid other sources of UV light

DEHYDRATION

- Majority of the body is water (up to 75%)
- Majority of the water is intracellular
- Fluid in must equal fluid out
- Daily requirement approximately 2 liters
- Causes include vomiting, diarrhea, sweating, diabetes, inability to drink

Symptoms of Dehydration

- Thirst and decreased urine output(deeper yellow color) initial symptoms
- Secondary symptoms include
 - Dry mouth
 - Stop making tears
 - Sweating may stop
 - Muscle cramps
 - Nausea and vomiting

Symptoms - continued

- Lightheadedness especially while standing (orthostatic hypotension)
- Increased heart rate- heart has to pump faster to deliver fluid to the tissue (cardiac output = stroke volume x heart rate).
- Tertiary symptoms include
 - Confusion and weakness as the body receives less blood
 - Coma and organ failure

Diagnosis

- Mental Status- is patient awake, alert and oriented
- Vital signs
 - Blood pressure and heart rate are taken with the patient sitting up and laying down- caveat- if patient is taking beta blockers for high blood pressure this may interfere
 - Respiratory rate

DX - continued

- Temperature to assess fever
- Skin loses its turgor-less elasticity
- Sunken eyes

Treatment of Dehydration

- Water
- Clear broths
- Popsicles
- Jello-O
- Gatorade/Powerade and Pedialyte
- Urine output is the gold standard to assess rehydration

Heat Exhaustion

- Milder form of heat related illness
- People prone to this are
 - Elderly
 - People with high blood pressure
 - People working or exercising in a hot environment

Heat Exhaustion-Diagnosis

- Heavy Sweating
- Paleness
- Muscle cramps
- Fatigue
- Weakness
- Dizziness
- Headache
- Nausea or vomiting
- Fainting

Heat Exahustion -Treatment

- Cool nonalcoholic beverages
- Rest
- Cool shower or bath
- An air conditioned environment
- Light weight clothing
- If the symptoms are severe and/or the patient has heart problems or a history of hypertension call 911
- If untreated this can progress to heat stroke

Heat Stroke

- Medical emergency
- Form of hyperthermia with accompanying neurological symptoms
- Temperature can rise to 106 degrees F or 41.1 degrees C
- Exertion in extreme heat when patient cannot dissipate the heat fast enough or if the patient becomes dehydrated and therefore cannot dissipate the heat

Heat Stroke - Diagnosis

- Those most susceptible include
 - Infants
 - The elderly-associated with heart, lung or kidney disease, or taking medications that make them vulnerable
 - Athletes
 - Outdoor workers
 - Glider pilots and Ground Crew in summer extreme heat

Heat Stroke Symptoms

- Can mimic those of a heart attack
- Mimic heat exhaustion but some can go straight to heat stroke without any warning
- High body temp
- Absence of sweating with hot red or flushed dry skin
- Rapid pulse
- Difficulty breathing

Heat Stroke Symptoms

- Strange behavior
- Hallucinations
- Confusion
- Agitation
- Disorientation
- Seizure
- Coma

Heat Stroke - Treatment

- CALL 911
- Get victim to a shady area
- Remove clothing
- Apply cool water to the skin and fan to facilitate sweating and evaporation
- Ice packs in armpits and groin
- Monitor temperature until it drops to 101
- ES can give instructions if their arrival is delayed

Treatment of Minor Injuries

- Cuts and scrapes
- First step is to stop the bleeding by applying pressure for 10-20 minutes. If the bleeding does not stop → seek medical attention
- If bleeding stops- clean the wound with soap and water and gently remove any foreign material. Hydrogen peroxide and betadine may be used initially but not long term.
- Cover with light gauze or band aid
- Seek medical attention if the cut goes below the skin and fat can be seen

Minor injuries

- Puncture wounds
- Higher risk of infection
- Clean the wound (usually not much bleeding)
- Ice packs may decrease the swelling
- Monitor closely for signs of infection

Tetanus

- Most have been immunized
- Lockjaw is the common term
- Booster shots every 10 years
- Booster within five years if wound is very dirty or occurs in a tetanus prone areas (rural areas or poverty stricken areas)
- Incomplete series of three shots- you may need tetanus immunoglobulin to prevent lock jaw

911

- Symptoms of Heat Stroke
- Symptoms of Heart Attack
 - Anxiety
 - Back Pain
 - Cold Sweat
 - Jaw or left arm pain
 - Abdominal pain- nausea
 - Chest pain”-elephant sitting on my chest”.” Vise squeezing my chest”

911-continued

- Symptoms of Stroke
 - Sudden numbness of the face, arm or leg especially on one side of the body
 - Loss of voluntary movement and or sensation
 - Sudden confusion or trouble speaking
 - Weakness in the face which can cause drooling

911- cont

- Sudden trouble seeing in one or both eyes
- Sudden trouble walking, dizziness, loss of balance or coordination
- Sudden severe headache without known cause
- Loss of consciousness
- Time is of the essence as prompt administration of a clot dissolving medication can save the person's life and/or function

Basic life support

- Suggestion that club instructors have CPR training.
- All members have a medical card on file that can be presented to the paramedics should their assistance be necessary.
- Key things to include are medications, allergies and significant medical conditions
- Privacy can be kept

Club First Aid Kit

- Bandages and Dressings
- Thermometer
- Instant Cold Packs
- Irrigating Syringe
- Saline
- Antiseptic solution
- Sealed medical record cards
- Latex gloves
- Flashlight
- Mouthpiece for CPR
- Sharp scissors
- Safety pins
- ACE wraps
- Blanket
- Emergency phone numbers