



## Wilderness First Aid Scenario

**SUCKING CHEST WOUND****Victim 1 – Youth With Penetrating (Sucking) Chest Wound****SUMMARY**

A Scouts BSA troop is on a 22-day-long through-hike of the John Muir Trail in the backcountry of California's Sierra Nevada mountains. There are three adult Scouters and 12 Scouts, ranging in age from 13 to 17 years old. The Scouts have been preparing for this event over the last six months. They have done three shakedown hikes, and several Scouts and all the Scouters have completed a Wilderness First-Aid course. Mid-morning on the third day out from Yosemite, while gaining elevation using a switchback trail, at approximately 8,500 feet, Kamal, a 15-year-old Scout, loses his footing, slides off trail, and tumbles down an incline about 100 feet onto the switchback path below. Kamal's fall is noisy and takes him through a lot of underbrush. He can be heard moaning and screaming but cannot be seen due to the dense foliage. The unit safely descends the trail to find Kamal supine with multiple superficial cuts and abrasions consistent with the fall. His shirt is torn and has a growing blood stain, and there is an obvious wound to his right chest wall. There is a slight hissing sound heard with inhalation, and the wound under the shirt seems to have bubbles or froth. Kamal holds a broken, sharp branch in his left hand that has blood on the sharpened end to about 1.5 inches. Upon questioning, he indicates the sharp end of the branch was stuck in his chest wall and he pulled it out. His breathing is rapid and shallow.

**SCENARIO DETAIL**

This is a troop event in the backcountry with 12 Scouts and three adult Scouters. Kamal's parents are not among the Scouters present. It is approximately 10 a.m. with sunny blue skies and a temperature of 52°F. The unit is approximately 12 miles south of the Tuolumne Meadow Resupply Station and 26 miles north of Red's Meadow Resort. The John Muir Trail is well marked and well maintained. There is no cellphone coverage available, but the unit has a satellite messenger GPS and a well-stocked WFA kit distributed among participants. It takes some time for others to reach Kamal's position due to the steep incline and need to set up a life safety rope for the descent. An adult Scouter is the first to descend to Kamal, followed by two older Scouts with WFA training and equipment.

**STUDENT RESPONSE**

## 1. Scene safety:

Ensure that the scene safety assessment is completed.

- a. Descend at a safe pace despite the urgency to get to the victim.
- b. Avoid sharp rocks and other environmental factors.
- c. Avoid becoming additional victim(s).
- d. Ensure there are no wildlife concerns (snakes, etc.).

## 2. Primary assessment:

Kamal is alert and awake. He appears anxious and has shortness of breath and an obvious chest wound with bleeding at the site.

## 3. Secondary assessment:

- a. Physical exam: Kamal is short of breath and is breathing rapidly and shallowly. He has difficulty speaking due to his labored breathing. There is an obvious wound to the right lateral chest with bubbles; the wound hisses or gurgles with each inhalation. The mechanism of injury is identified as a sharp broken branch, which impaled Kamal and which he pulled out. The depth of the penetration is approximately 1.5 inches, based upon the length of blood staining the sharp end of the branch. Kamal reports that he did not hit his head. There is no bleeding or fluid from his ears, pupils are equal, no point tenderness or swelling is noted to the neck, he follows commands and is able to move all extremities on command, and he wiggles fingers and toes. He responds appropriately to touch and is able to identify when and where he is being touched.

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b. Vital signs:

LOC: A&Ox4

Heart rate: 120

Respirations: 36

Skin: Pale; subsequent assessments show bluish lips and nails

b. SAMPLE:

S – Shortness of breath; penetrating chest wound that hisses on inhalation

A – No known allergies

M – No routine medications

P – Fit male youth; no physical restrictions

L – Breakfast; had a bowel movement and voided this morning

E – Fall down steep incline 100 feet with resultant trauma and 1.5-inch chest impalement

4. Subsequent assessments:

a. Vital signs (after 5 minutes) if no chest seal:

LOC: A&Ox4

Heart rate: 125

Respirations: 36, grunting on exhalation, wound hisses on inhalation, nostrils flare when breathing, panting pattern to speech

Skin: Pale; bluish color around lips, blue nail beds

b. Vital signs (after 10 minutes) if no chest seal:

LOC: alert, unable to determine orientation

Heart rate: 150

Respirations: 44, grunting on exhalation, wound hisses on inhalation, nostrils flare when breathing, sweating, lifts shoulders to inhale, unable to catch breath to speak

Skin: Pale; blue lips, blue nail beds

c. Vital signs after chest seal applied:

LOC: alert&O x4

Heart rate: 90

Respirations: 30, breathes easier — decrease or no grunting, wound hissing ceases, nostrils no longer flare, sweating resolves, able to speak

Skin: Color returns to skin, lips, and nails



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### **POST-SCENARIO DEBRIEF**

- How can this scenario be prevented?
- How would you provide care?
- How do you improvise a chest seal when a commercial product is not available?
- When should you consider releasing a corner of the improvised dressing?
- What are the names of commercially available chest seals?
- How would you seek help?
- Should runners be sent for help in addition to using the satellite messenger GPS system?
- What training should unit members have in using the satellite messenger GPS system before starting the trek?
- How would you seek help if the unit didn't have a satellite messenger GPS?
- Did the responders consider safety issues?
- Should the victim be transported and, if so, what means should be used to transport him back to the trail?

### **NOTE TO THE INSTRUCTOR**

Vital signs would deteriorate the longer treatment is delayed. Include these changes in the scenario as it unfolds: gasping, labored breathing; heaving chest and neck muscles; increased blueness of the lips and fingernails; decreased depth of respiration on the right side with normal depth on the left; bulging veins of the neck and face; right side of chest seems larger and moves less; trachea shifts to the left; and signs of shock. This victim needs immediate evacuation. Emergency services need to be notified via satellite messenger GPS system urgently. If not available, the best method would be to send two of the fastest unit members to the closest ranger location or area with cellphone coverage. Be sure that students note the location of the victim before leaving the group and that they have adequate supplies.

### **OUTCOMES**

Upon completion of this lesson and skill practice, the student will be able to:

1. Demonstrate a field assessment of a patient with a chest injury.
2. Describe the emergency treatment of and long-term care for a chest injury.
3. Describe situations that would require an evacuation versus a rapid evacuation.