

■ Head and Face Injuries

Motor Vehicle Accident

Scenario: You are dispatched at 5 AM to a single-car crash with possible injuries. Law enforcement and the fire department are also en route. Upon arrival you observe a mid-size sedan that has crashed head-on into an oak tree on the shoulder of a poorly lit rural road with visibility further impaired by dense fog. Law enforcement has cleared the scene. They inform you that there is only one patient, who is pinned in the vehicle. You approach the driver's side of the car and find a middle-aged, unrestrained woman complaining of a headache. She states that she was driving to work when she lost control of her car, crashed into the trees, and struck her head on the windshield. Although the patient denies any loss of consciousness, there is a bruise on her forehead. You observe moderate front-end damage with intrusion into the passenger compartment. The air bags have deployed, and the windshield is intact.

Prearrival Questions

1. What factors would influence your decision in how to remove the patient from the vehicle?
2. Based on the information provided, what injuries do you suspect?

Scene safe	Yes
Body substance isolation	Gloves
Mechanism of injury	Vehicle vs. tree
Number of patients	One
C-spine stabilization	Yes

Assessment Questions

3. Besides head trauma, what else might account for the patient's altered mental status?
4. What additional information would you like to know?

General impression	Middle-aged woman unrestrained in the driver's seat of her vehicle
Level of consciousness	Responsive and answers questions appropriately
Chief complaint/life threat	Headache
Airway and breathing	Open and patent
Oxygen therapy	15 L/min via nonrebreathing mask
Adequate ventilation	Patient is breathing at a rate of 20 breaths/min
Initial treatment	Maintain c-spine and protect from injury
Circulation	No major bleeding seen
Pulse	Radial pulses strong and equal
Skin	Warm, pink, and dry
Transport decision	Load and go
Focused or rapid assessment	Rapid assessment reveals no immediate life-threatening injuries
Baseline vital signs	Blood pressure—146/92 mm Hg Pulse—78 beats/min Respirations—20 breaths/min SaO ₂ —97% on room air PEARRL Blood glucose level—72 mg/dL

SAMPLE history	S–Headache; minor abrasions to the face from air bag deployment A–NKA M–Lopressor P–Hypertension L–Unknown E–Driving to work in dense fog
Head assessment	No injuries noted
Neck assessment	No JVD or tracheal shift; no obvious injury
Chest assessment	No injury noted; breath sounds are clear and equal
Abdomen and pelvis assessment	No injuries noted
Extremities assessment	PMS present in all four extremities
Posterior assessment	No injuries noted
Secondary wounds	Abrasions to the face from air bag deployment

Management Questions

5. What are your treatment goals for this patient?
6. Review the steps for applying a long backboard.
7. Review the steps for removing the patient from the vehicle following placement of a short backboard.
8. Does this patient meet trauma alert criteria?
9. What should you do if the patient refuses c-spine immobilization?

Treatment	Maintain manual c-spine. Apply cervical collar. Immobilize the patient in the vehicle using a short backboard. Place the patient on a long backboard. Apply a cervical immobilization device. Provide high-flow oxygen via nonrebreathing mask at 15 L/min. Establish two large-bore IVs. Monitor vital signs for signs of shock.
Reassessment of vital signs	Every 5 minutes during transport.

Conclusion: The fire department arrives on scene and assists with the extrication of the patient from the vehicle and packaging for transport. Two large-bore IVs are started TKO. The patient is transported without difficulty to the local emergency department. Radiographs and a CT scan of the head reveal no injuries. The patient is monitored for a few hours in the emergency department for further observation and is discharged.