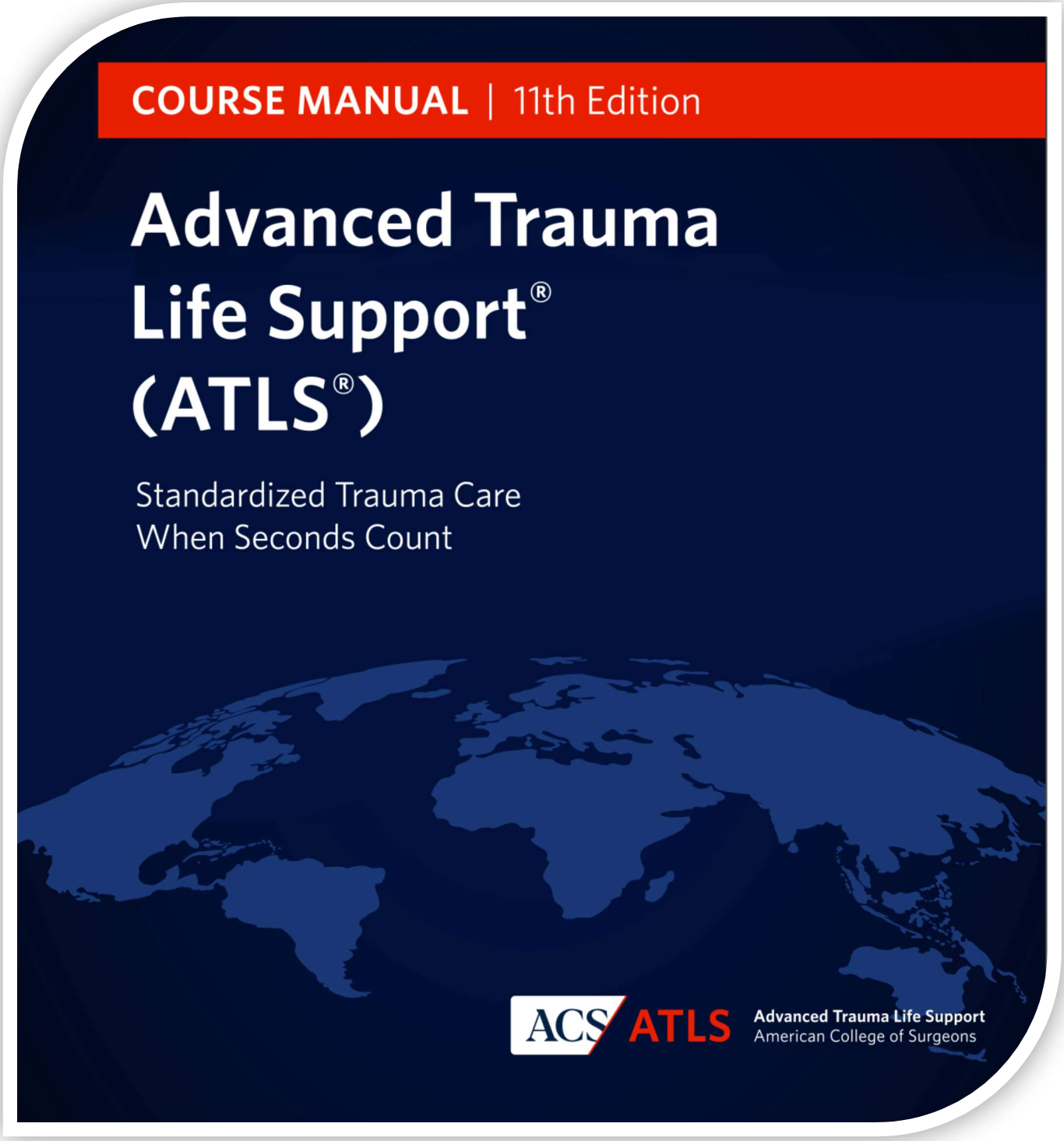

Examinationsmanual

ATLS SWEDEN

SWEDISH SURGICAL SOCIETY • SVENSK KIRURGISK FÖRENING •

Examinationsfall ATLS 11th Edition

ATLS 11th Examination Injuries and Radiographs

Patient	CTD								Röntgen							Patient
	Totalt	X	A	B	C	D	E	Adjuncts	Spine	Lungor	Pelvis	Abdomen	Extremities	SKULL#	e-FAST	
A	24	2	11	3	5	1	2			X	X		X		X	A
B	0															B
C	0															C
D	0															D
E	5	1	1	1	2				X	X	X	X	X		X	E
F	0															F
G	0															G
H	0															H
I	3			1	2					XX					X	I
J	0															J
K	0															K
L	15	1	3	3	5	1	2			X					X	L
M	16		2	3	7	1	2	1	X	XX	X				X	M
N	0															N
O	5			2	3					XX	X				X	O
P	0															P
Q	4		1	1		1	1			XX	X		X			Q
R	0															R
S	0															S
T	3		1	1	1					X					X	T
U	0															U
			19	15	25	4	7	1								

Allmän Information

Detta är ett levande dokument där kursledare och kurskoordinatorer har möjlighet att dela sina erfarenheter från examinationsfallen.
Exempel:

- Kursledarinformation: I detta fall får studenten information om hjärtfrekvens redan under A, trots att EKG-övervakning inte är uppkopplad.
- Koordinatorinformation: För att simulera ett X-blödningsproblem använde vi följande sminktips…

All återkoppling kring fallen eller tillhörande PowerPoint-material uppskattas av den nationella ATLS-fakulteten, för att möjliggöra fortsatt utveckling och förbättring av kursinnehållet.

Examinationsfall

Patient A:

Patient B: Blunt Trauma.

A 24-year old unhelmeted male motorcycle driver collided into the side of a truck and then slid approximately 40ft (12m) on the road

Patient C:

Patient D:

Patient E: Penetrating Trauma.

A 42-year-old male presents to the Emergency Area efter being shot. A friend transported the patient by a private vehicle.

Patient F:

Patient G:

Patient H:

Patient I: Penetrating Trauma.

35-year-old sustained a knife injury to the left chest in a reported domestic dispute 5 minutes prior to the ambulance arrival.

Patient J:

Patient K:

Patient L: Penetrating Trauma.

A 20-year-old male presents by private vehicle to the emergency area reporting several stab wounds to the right arm, chest and abdomen.

Patient M: Electrical Injury and Blunt Trauma.

A 42-year-old climbed an electrical pole to free a kite and contacted a high-voltage wire with the left forearm. The patient fell approximately 15ft. (5m) to the ground and landed on the left back. The patient was unconscious and without a pulse. Bystanders performed CPR for 5min with return of spontaneous circulation by the time of ambulance arrival.

Patient N:

Patient O: Blunt trauma.

A 30-year-old woman was the driver involved in a single vehicle crash. The car was impaled into a tree and 40 ft (12 m) down a hillside. The patient was wearing lap and shoulder belts. There was significant damage to the vehicle's front. It took 1 hour to extricate the patient from the vehicle.

Patient P:

Patient Q: Blunt Trauma with head injury

A 25-year-old female reportedly intentionally jumped from the third floor of an apartment complex in an attempt at self-injury.

Patient R:

Patient S:

Patient T: Penetrating Trauma.

A 24-year-old is brought to the Emergency Area by a friend who heard screams approximately 20 minutes ago and found the patient lying on the floor with multiple stab wounds.

Patient U:

Patientfall B

Incident History

M	A 24-year-old unhelmeted male motorcycle driver collided into the side of a truck and then slid approximately 40 ft (12 m) on the road.
I	Open left femoral fracture with profuse bleeding, left wrist deformity, and left temporal laceration with arterial bleeding.
S	BP 80/50, HR 150, RR 40, shallow and very noisy. Responds only to painful stimuli. Lips are cyanotic.
T	Oral airway inserted, oxygen at 6 to 8 L/min via mask, pressure dressings on the left thigh and head wound (both soaked with blood), spinal motion restriction with a semirigid cervical collar and a long spine board (change to region appropriate terms), and splint on the left wrist. Estimated time of arrival is 20 minutes.

Imaging

- Slide 1: Chest x-ray - definitive airway in appropriate position, multiple left rib fractures, potential left pulmonary contusion, left chest thoracostomy tube, and an obscured left hemidiaphragm with a dislocated gastric tube (consistent with a ruptured diaphragm)
- Slide 2: Pelvic x-ray - left femoral neck fracture; metallic object removed on repeat x-ray and no pelvic fracture present
- Slide 3: FAST – no intra-abdominal fluid
- Slide 4: Left femur x-ray - distal displaced fracture
- eFAST: (if requested, report only, no image) - equivocal for absent left lung sliding as a technically difficult study

Kommentar Fakultet:

INJURIES AND INJURY MANIFESTATIONS

PHYSICAL FINDINGS	INJURIES	SKILLS
Upper airway obstruction with severe respiratory distress due to facial distortion and blood in nose and mouth	Multiple facial fractures, abrasions and contusions; cannot intubate / cannot ventilate situation	Surgical / Incisional Airway
Tenderness on palpation of occiput and cervical spine	C1 fracture	Spinal Motion Restriction
Responds only to painful stimuli	Left temporal depressed skull fracture, scalp laceration with arterial bleeding, TBI	GCS Score
Tenderness and crepitus over the left chest wall	Multiple left rib fractures, pulmonary contusion, left pneumothorax	Thoracostomy (Finger and Tube)
Exsanguinating left thigh wound; deformity left femur; nonpalpable left pedal pulses; left foot cool and pale	Left femoral neck fracture, left open distal femur fracture	Staged Bleeding Control, Tourniquet Application; Splint Application
Deformity and swelling of the left wrist	Left wrist fracture	Splint Application
Multiple abrasions	Multiple abrasions along left trunk and lower extremity	

Patientfall E

Incident History

M	A 42-year-old male presents to the Emergency Area after being shot. A friend transported the patient by a private vehicle.
I	The friend reports the patient has multiple bullet wounds and that injury occurred approximately 20 minutes before arrival.
S	The friend reports the patient has become more "sleepy"; the patient was able to walk to the car and was talking.
T	No treatments.

Imaging

- Slide 1: Chest x-ray – endotracheal and right thoracostomy tubes are in appropriate positions; no metallic foreign body; residual right hemothorax
- Slide 2: FAST image (right upper quadrant) – fluid is present between the liver and kidney
- Slide 3: FAST image (pelvis) – fluid in pelvis
- Slide 4: FAST image (pericardium) – no pericardial fluid
- Slide 5: AP cervical x-ray – metallic foreign body to left of C5 body
- Slide 6: Lateral cervical x-ray - metallic foreign body anterior to C5/6
- Slide 7: AP abdominal x-ray – metallic foreign body in left midabdomen
- Slide 8: Pelvis x-ray – no abnormality
- Slide 9: Right femur x-ray – two metallic foreign bodies without fracture

INJURIES AND INJURY MANIFESTATIONS

PHYSICAL FINDINGS	INJURIES	SKILLS
Bullet wound anterior to the right sternocleidomastoid muscle with moderate hematoma; hoarseness	Possible vascular injury, possible laryngeal injury	Bleeding assessment, Airway management
Bleeding from an upper thigh bullet wound (lower thigh wound is not bleeding)	Possible vascular injury	Bleeding assessment and control, Assessment of distal pulses
Single right chest bullet wound at the sixth intercostal space at the midclavicular line, decreased right breath sounds	Right pneumohemothorax	Tube thoracostomy, chest x-ray interpretation
Slightly distended abdomen with right upper quadrant tenderness	Penetrating injury to the right diaphragm and intraabdominal injuries	Recognition hemorrhagic shock, blood product resuscitation

Kommentar Fakultet:

Patientfall I

Incident History

Patient gender may be modified per site model.

M	35-year-old sustained a knife injury to the left chest in a reported domestic dispute 5 minutes prior to ambulance arrival.
I	A 2cm sucking stab wound is present in the left third intercostal space, just anterior to the midaxillary line. Left breath sounds are diminished. The skin is cool and diaphoretic. The patient responds to verbal and pressure stimulation by moaning and groaning.
S	Vital signs during transport are BP 80/40, HR 140, RR 32, and SpO_2 80%.
T	Petroleum gauze was placed over the chest wound. Oxygen is supplied via mask at 12 L/min. One large-caliber IV was inserted and 500cc of crystalloid solution was infused. Estimated time of arrival is 2 min.

INJURIES AND INJURY MANIFESTATIONS

PHYSICAL FINDINGS	INJURIES	SKILLS
Rapid and shallow respirations; stab wound in the left third intercostal space anterior to the midaxillary line; decreased left breath sounds; petroleum gauze placed pre-hospital	Open left pneumothorax	Airway assessment, Tube thoracostomy
Distended neck veins; muffled heart tones	Cardiac tamponade, likely cardiac injury	Evaluation penetrating injury and shock, Interpretation FAST/eFAST

Images and Results

- Slide 1: Chest x-ray - left pneumothorax
- Slide 2: Chest x-ray – left thoracostomy tube, lung expanded
- Slide 3: FAST (pericardial window video) – pericardial fluid is present
- Slide 4: FAST (pericardial window video) – pericardial fluid is present
- Slide 5: eFAST (still images) – left "barcode sign" indicative of pneumothorax, right normal "waves on a sandy beach" image

Kommentar Fakultet:

Patientfall L

Incident History

Scenario gender may be determined by the course administrators based upon available models.

M	A 20-year-old presents by private vehicle to the emergency area reporting several stab wounds to the right arm, chest, and abdomen.
I	There is profuse bleeding coming from the right arm despite the patient attempting to hold pressure. The patient reports stab wounds to the right arm, chest, and upper abdomen.
S	Respirations are rapid and shallow. The patient reports feeling light-headed, speaks in short, gasping words, and is pale and anxious. Lips are cyanotic.
T	The patient is immediately transported to a treatment room.

Images and Results

- Slide 1: FAST – (right upper quadrant) intra-abdominal fluid
- Slide 2: Chest x-ray – right thoracostomy tube

INJURIES AND INJURY MANIFESTATION

PHYSICAL FINDINGS	INJURIES	SKILLS
6 cm laceration in the medial distal right arm with arterial hemorrhage	Brachial artery laceration	Staged bleeding control, tourniquet application
Right chest wound, respiratory distress, gasping speech, tachypnea	Right pneumothorax	Right tube thoracostomy
Pale, cyanosis, hypotension, abdominal stab wound, right back stab wound	Intra-abdominal hemorrhage	Blood product resuscitation, transfer to OR, avoid RSI medications

Kommentar Fakultet:

Patientfall M

Incident History

M	A 42-year-old climbed an electrical pole to free a kite and contacted a high-voltage wire with the left forearm. The patient fell approximately 15 ft. (5 m) to the ground and landed on the left back. The patient was unconscious and without a pulse. Bystanders performed CPR for 5 min with return of spontaneous circulation by the time of ambulance arrival.
I	A burn is present on the left forearm. The patient reports difficulty breathing and pain in the back, lower left chest, and left upper arm.
S	BP 90/60, HR 120, RR 24, SpO_2 90% with 6 L/min oxygen via mask.
T	No defibrillation or cardiac medications were administered. Supplemental oxygen at 6 L/min via mask. One 14 G IV in the right antecubital vein. Spinal motion restriction with a semirigid cervical collar and a long spine board (change to region appropriate terms). Estimated time of arrival is 10 minutes

Imaging

- Slide 1: Chest x-ray – left pneumothorax, multiple left rib fractures, subcutaneous emphysema
- Slide 2: Chest x-ray – left tube thoracostomy, resolution of pneumothorax, multiple left rib fractures, subcutaneous emphysema
- Slide 3: Pelvic x-ray - no pelvic fractures present
- Slide 4: Lateral cervical spine x-ray – without abnormalities
- Slide 5: FAST (left upper quadrant) – intra-abdominal fluid is present
- Slide 6: eFAST (left chest and left upper quadrant) – intra-abdominal fluid is present

INJURIES AND INJURY MANIFESTATIONS

PHYSICAL FINDINGS	INJURIES	SKILLS
Central cyanosis, decreased breath sounds with hyperresonance over the left chest, tracheal deviation to the right	Left tension pneumothorax	Thoracostomy (Needle / Finger and Tube)
Tenderness over the left lower ribs, ecchymosis of the left chest, and subcutaneous emphysema	Fractured left ribs 2-9	Thoracostomy
Cardiac dysrhythmia	Dysrhythmia secondary to electrical injury	Cardiac rhythm monitoring
Burns on left forearm and right hip	Electrical burns	Initiate volume resuscitation at 4 cc/kg/%TBSA burn / 16
Swollen left forearm and wrist, cool hand with cyanotic fingertips, absent left radial pulse	Electrical burn and compartment syndrome of left forearm	Emergent referral for compartment release
Hematuria and myoglobinuria	Rhabdomyolysis	Volume resuscitation to obtain urine output of 100 cc/hr
Left upper quadrant pain and tenderness, referred pain to left shoulder	Splenic injury	Emergent surgical consultation, possible transfer

Kommentar Fakultet:

Patientfall O

Incident History

Scenario gender is female as images are of female patient.

M	A 30-year-old woman was the driver involved in a single vehicle crash. The car was impaled into a tree and 40 ft (12 m) down a hillside. The patient was wearing lap and shoulder belts. There was significant damage to the vehicle's front. It took 1 hour to extricate the patient from the vehicle.
I	During transport, the patient complains of severe left chest pain and is slightly confused. Breathing is rapid and shallow.
S	Five minutes prior to arrival the vital signs are BP 90/60, HR 120, RR 36, and SpO_2 88% with 6 L/min face mask oxygen.
T	Interventions performed include oxygen via mask at 6 L/min, application of a cervical motion restriction device (cervical collar), restriction of spinal motion on a long spine board, one large-caliber intravenous catheter, and 1 L of isotonic crystalloid fluid intravenously. ETA is 30 minutes.

Imaging

- Slide 1: Chest x-ray - left rib fractures, flail segment, and hemopneumothorax
- Slide 2: Chest x-ray - left thoracostomy tube
- Slide 3: FAST (right upper quadrant) – no fluid
- Slide 4: FAST (left upper quadrant) - no fluid
- Slide 5: Pelvic x-ray – no abnormality

INJURIES AND INJURY MANIFESTATIONS

CTD The Learner should identify the injuries in proper sequence based on physical and imaging findings, and institute resuscitative measures.

PHYSICAL FINDINGS	INJURIES	SKILLS
Rapid shallow respirations Seat belt sign over chest Abnormal left chest movement, left chest tenderness with palpation and movement, decreased left breath sounds	Left rib fractures with flail segment Left hemopneu-mothorax	Left tube thoracostomy, chest x-ray interpretation
Tachycardia and hypotension	Bleeding and hemorrhagic shock due to chest injury	Volume resuscitation, evaluation for source of hemorrhage, FAST/eFAST and pelvic x-ray interpretation
Confusion, history of diabetes	Concussion versus hypoglycemia	Neurologic exam, injury prevention

Kommentar Fakultet:

Patientfall Q

Incident History

M	A 25-year-old female reportedly intentionally jumped from the third floor of an apartment complex in an attempt at self-injury.
I	The patient reports severe left leg pain. There is a large contusion on the left forehead. The left thigh is contused and deformed without an open wound. Breath sounds are decreased on the left. Per bystanders, the patient was conscious immediately after injury, lost consciousness, and then regained consciousness at time of ambulance arrival.
S	BP 100/60, HR 110, RR 24 and shallow, and SpO_2 89%. GCS score is 14 (E4, V4, M6).
T	Oxygen at 6 L/min via mask. One large-caliber intravenous catheter was inserted, and 500 cc of isotonic IV fluid was administered. Full-spinal motion restriction, including a cervical motion restriction device (cervical collar), was instituted. A traction splint was applied to the left leg.

Imaging

- Slide 1: Chest x-ray - definitive airway in appropriate position, multiple left rib fractures, left pneumothorax
- Slide 2: Chest x-ray - definitive airway in appropriate position, multiple left rib fractures, left thoracostomy tube
- Slide 3: Pelvic x-ray - no pelvic fracture present
- Slide 4: Left femur x-ray – midshaft fracture

INJURIES AND INJURY MANIFESTATIONS

PHYSICAL FINDINGS	INJURIES	SKILLS
Unresponsive, bruise on left forehead	Intracranial hemorrhage	Neurologic exam, GCS score
Sonorous, gasping, rapid respirations	Airway obstruction due to head injury	Basic airway maneuvers, definitive airway, endotracheal intubation
Diminished left breath sounds, tenderness of left chest wall	Left rib fractures (based on clinical findings), left pneumothorax	Tube thoracostomy
Left thigh deformity	Left femur fracture	Musculoskeletal exam, splint management

Kommentar Fakultet:

Patientfall T

Incident History
The site may determine patient gender based on model used.

M	A 24-year-old is brought to the Emergency Area by a friend who heard screams approximately 20 minutes ago and found the patient lying on the floor with multiple stab wounds.
I	The friend reports the patient was stabbed in the right chest and left abdomen. The friend heard a bubbling noise coming from the right chest.
S	The friend reports the patient was moaning, agitated, and breathing rapidly.
T	No treatments.

Imaging

- Slide 1: Chest x-ray – appropriately position right thoracostomy tube with residual hemothorax
- Slide 2: FAST image (right upper quadrant) – no intra-abdominal fluid
- Slide 3: FAST image (left upper quadrant) – intra-abdominal fluid around the spleen; kidney image is distorted

INJURIES AND INJURY MANIFESTATIONS

PHYSICAL FINDINGS	INJURIES	SKILLS
Dyspnea and tachypnea, 3 cm wound at the right 3rd intercostal space at the midclavicular line that is bubbling with breaths	Open pneumothorax	Breathing assessment, tube thoracostomy, chest x-ray interpretation
Hypotension, agitation	Hemorrhagic shock	Circulation assessment, volume resuscitation
3 cm wound at the junction of the left 10th intercostal space and anterior axillary line, abdominal distension	Intra-abdominal injury	Penetrating trauma assessment, FAST/ eFAST image interpretation
4 cm left back wound about 10 cm from the midline at the level of T12, gross hematuria	Potential left kidney injury	Exposure stage of Primary Survey; penetrating trauma assessment

Kommentar Fakultet:

Patientfall

Kommentar Fakultet: