

Trauma Surgery Experiences in Afghanistan

Forward Operating Base Lagman

Qalat, Afghanistan

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MISSION

- **ACT AS AN ARMY FORWARD SURGICAL TEAM (FST)**
- **SIMILAR TO TWO NAVY FORWARD RESUSCITATIVE SURGERY SYSTEM (FRSS) COMBINED**
- **20 INDIVIDUAL AUGMENTEES FROM 12 COMMANDS**
- **UPGRADE THE UNIT TO A ROLE 2 ENHANCED**
- **PROVIDE EMERGENT SURGICAL CARE FOR ZABUL PROVINCE**

MEDICAL CARE LEVELS

- **BUDDY AID**
- **ROLE 1 – BATTALION AID STATION, PHYSICIAN AND PA**
- **ROLE 2 – FORWARD SURGICAL TEAM, LIFE AND LIMB SAVING SURGERY, NO LABS, NO XRAY**
- **ROLE 3 – COMBAT SURGICAL HOSPITAL, STABILIZATION AND ICU**
- **ROLE 4 – LANDSTUHL REGIONAL MEDICAL CENTER**
- **ROLE 5 – UNITED STATES**

COMPOSITION

- **THREE GENERAL SURGEONS**
- **ONE ORTHOPEDIC SURGEON**
- **THREE NURSES (ER, ICU, OR)**
- **ONE PA**
- **TWO CRNA'S**
- **ONE SENIOR CHIEF**
- **THREE OPERATING ROOM TECHNICIANS**
- **SIX FLEET MARINE FORCE CORPSMEN**

TRAINING

- PROFICIENT IN THEIR FIELD
- SMALL ARMS QUALIFICATIONS
- LAND NAVIGATION
- CONVOY TRAINING
- GROUP COHESION, “SENSE OF HUMOR?”

"THE" NAVY FST



ADDITIONAL MEDICAL ASSETS

- **ARMY ROLE 1 – ONE GMO, ONE PA, TWO MEDICS**
- **ARMY MEDICAL SUPPORT UNIT – ONE INTERNIST, LAB TECH, X-RAY TECH, 4 MEDICS**
- **ROMANIAN ROLE 1 – TWO GMO'S, ONE DENTIST, TWO MEDICS**
- **SCATTERED MEDICS INTRINSIC TO INDIVIDUAL UNITS**
- **6 MAN AIR FORCE MEDICAL HOLDING TEAM – 3 NURSES, 3 MEDICS**

Welcome To



FOB LAGMAN

Made by

1st Jose RODRIGUEZ
A17 0401 from 820 001 / 002 - 004 000

Named in the Honor of

Army Staff Sergeant

ANTHONY S. LAGMAN

1st Lt in ROTC 10th AIBN DIV (1st AIBN) for his heroic actions
on 18 March 2004 in Helmand, AFGHANISTAN

During

OPERATION ENDURING FREEDOM

FOB LAGMAN

- **INITIALLY A ROMANIAN FOB**
- **1100 PERSONNEL**
- **MOSTLY A ROMANIAN MOUNTAIN UNIT WITH SUPPORTING US (MILITARY / CIVILIANS) AND SPECIAL OPERATIONS FORCES**
- **LOCATED JUST OUTSIDE OF QALAT, AFGHANISTAN**





Afghanistan

- International Boundary
 - Province Boundary
 - Road
 - River
 - ★ National Capital
 - Province Capital
 - City or Town
- 0 50 100 150 200 250 KM
0 50 100 150 Miles

FACILITIES

- FIVE RESUSCITATION BEDS
- TWO OR BEDS
- THREE ICU BEDS
- 10 HOLDING BEDS
- MINIMAL LABS – ISTAT, BLOOD TYPE CARDS
- PORTABLE X-RAY
- C-ARM
- BEST “HOSPITAL” IN ZABUL PROVINCE

FACILITIES



FACILITIES



LANDING ZONE



TRAUMA RECEIVING



OPERATING ROOM



ICU



CASES

- **400 RESUSCITATIONS**
- **200 PROCEDURES**
- **TWO MASS CASUALTY EVENTS**
- **FRESH WHOLE BLOOD “WALKING BLOOD BANK”
ACTIVATED 6 TIMES**
- **CASES PEAKED THE SUMMER AND AFTER
SANDSTORMS**

CASES



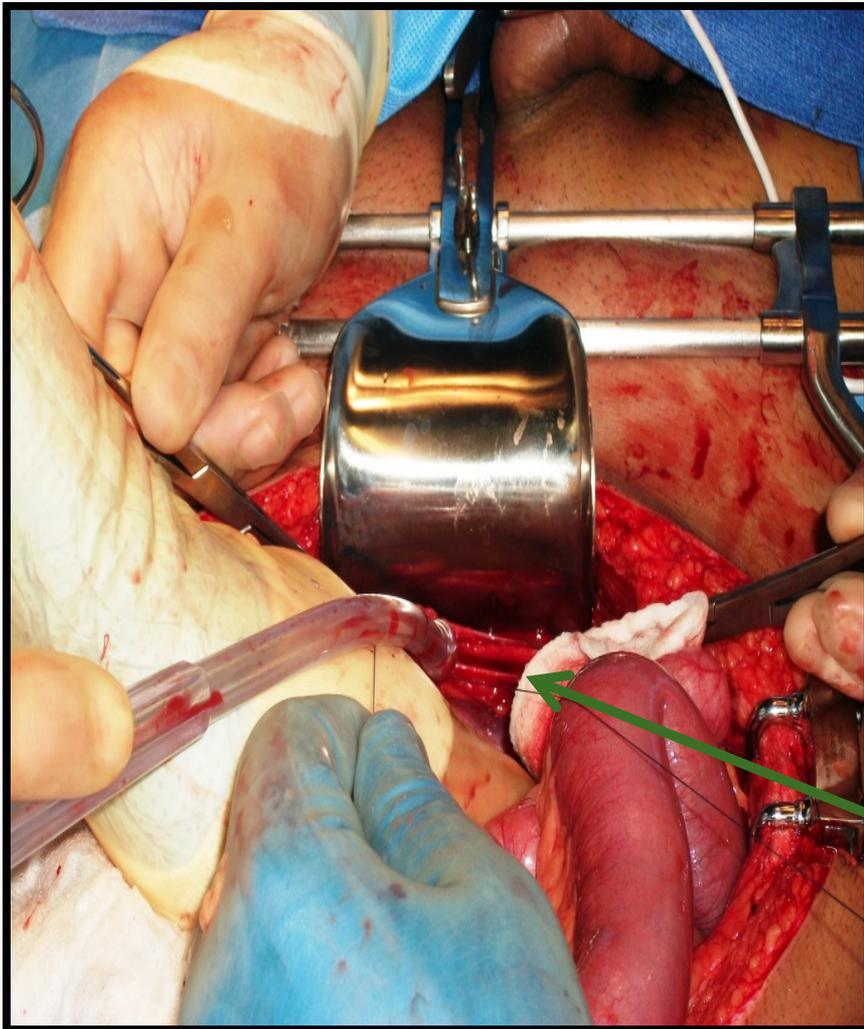
- ANA HIT IN L KNEE WITH "PEN FLARE"
- THROUGH JOINT SPACE
- REQUIRED WASHOUT IN OR

CASES



- **ROMANIAN ARMY SOLDIER FELL WITH AK74**
- **MAGAZINE LANDED ON FINGER CAUSING AMPUTATION**
- **WASHED OUT IN TRAUMA BAY AND SUTURED**

CASES



- ANA HIT BY HUMVEE
- PRESENTS W/ SBP 50 C/O ABD PAIN
- IMPROVED WITH 2L CRYSTALLOIDS – BP 100'S
- STABLE PELVIC FRACTURE ON PLAIN FILM
- GROSS BLOOD W/ FOLEY
- TO OR FOR EX LAP
- BLADDER RUPTURE W/ PELVIC HEMATOMA

CASES



- **ARMY SSGT GSW TO L CHEST**
- **FELL FROM HESCO BARRIER**
- **? LOC**
- **MINOR ABRASION**
- **TRANSFERRED FOR CT HEAD/C-SPINE**

CASES



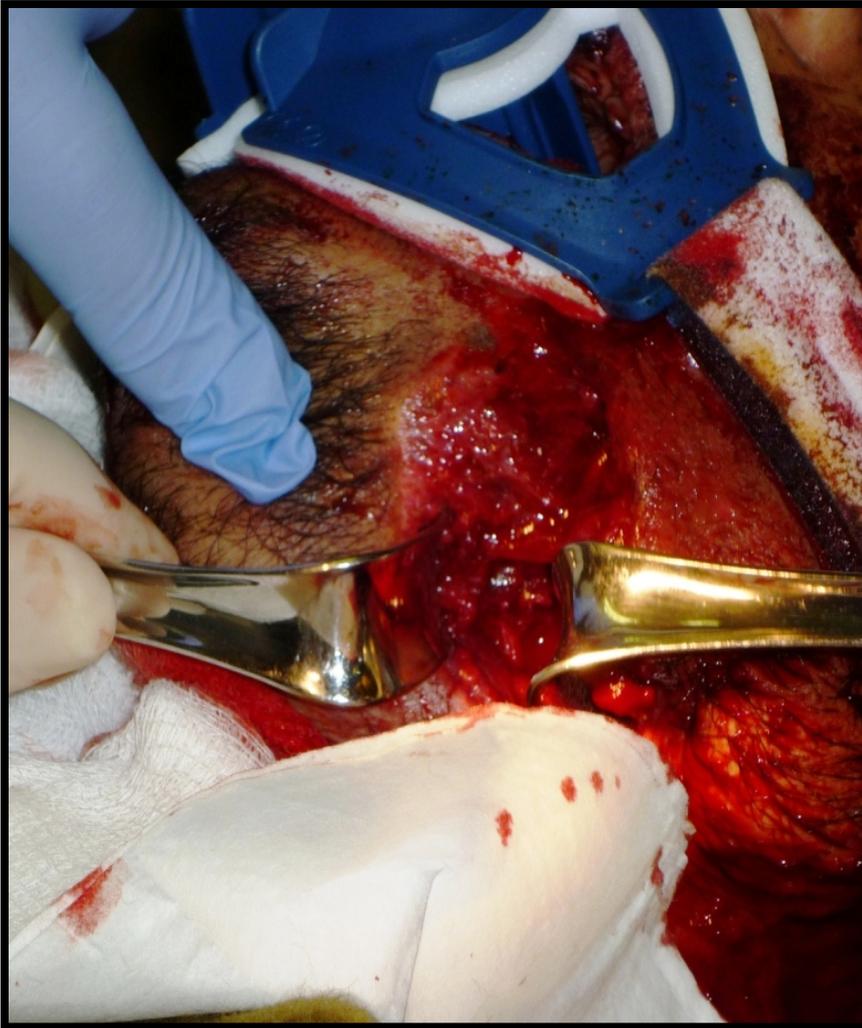
- **ROMANIAN SOLDIER W/
GSW TO RLE**
- **TIB-FIB FX**
- **WASHOUT AND EX-FIX
IN OR**

CASES



- **ANA - IED BLAST - NO BODY ARMOR**
- **PRESENTS W/ TRACH & SPONTANEOUS RESP, MASSIVE HEAD TRAUMA**
- **WENT APNEIC & ASYSTOLIC**
- **IMPROVED W/ EPI - PEA**
- **CPR FOR 30 MINUTES**
- **UNABLE TO FULLY RESUSCITATE**

CASES



- ANA - IED BLAST – NO IBA
- PRESENTS W/ OPEN MANDIBLE & LEFT CALCANEUS FX
- MAINTAINED AIRWAY
- CONTINUED TO C/O LLE PAIN DESPITE NARCS & SPLINT
- INTUBATED TO SECURE AIRWAY PRIOR TO TRANSPORT
- DEVELOPED MANDIBULAR ARTERY BLEED – SUTURED AT BEDSIDE

CASES



- **AFGHAN SECURITY GUARD REPORTEDLY SHOT IN BACK BY TALIBAN**
- **HEMODYNAMICALLY STABLE**
- **FOREIGN OBJECT REMOVED**
- **TO OR FOR WASHOUT & CLOSURE**
- **SCAPULAR FRACTURE NOTED IN OR**
- **TRANSFERRED FOR CT CHEST**

CASES



- **AFGHAN SECURITY GUARD IED BLAST**
- **OPEN R TIB/FIB FX**
- **OPEN L TIB/FIB FX DISLOCATION**
- **TO OR FOR WASHOUT, EX-FIX**

CASES



- ANA SOLDIER IED BLAST TO FACE
- OPEN SKULL FX
- MULTIPLE FACIAL AND INTRAORAL LACS
- PENETRATING WOUNDS TO NECK/R SHOULDER
- INTUBATED
- SURGICEL PACKED TO ORAL LACS
- TRANSFERRED FOR CT HEAD

CASES



- **AFGHAN CIVILIAN BURNED IN GASOLINE FIRE**
- **PRESENTS 3 DAYS POST BURN FROM HELMAND PROVINCE**
- **25% BSA**
- **DEBRIDED**
- **SILVADENE, SULFAMYLON & KERLIX DRESSING**

CASES



- CIVILIAN CONTRACTOR IED BLAST
- RUE, LLE, RLE TRAUMATIC AMPUTATIONS
- OPEN MANDIBLE FX
- SEVERE SCALP LACERATIONS
- LMA AT SCENE
- LOST PULSE AT FRONT GATE
- OPEN THORACOTOMY
- EXSANGUINATED



CASES



- 15 YEAR OLD AFGHAN BOY IED BLAST
- OPEN WOUND TO ANT ABD W/ PROTRUDING OMENTUM
- TENTING FB IN BACK
- TO OR FOR EX LAP
- COMPLEX LIVER LAC
- R KIDNEY SUPERIOR POLE INJURY – NONEXPANDING PERINEPHRIC HEMATOMA
- TRANSVERSE COLON INTRAMURAL HEMATOMA
- PACKED & LEFT INCISION OPEN
- TRANSFERRED FOR FURTHER SURGICAL EVAL/TX

CASES



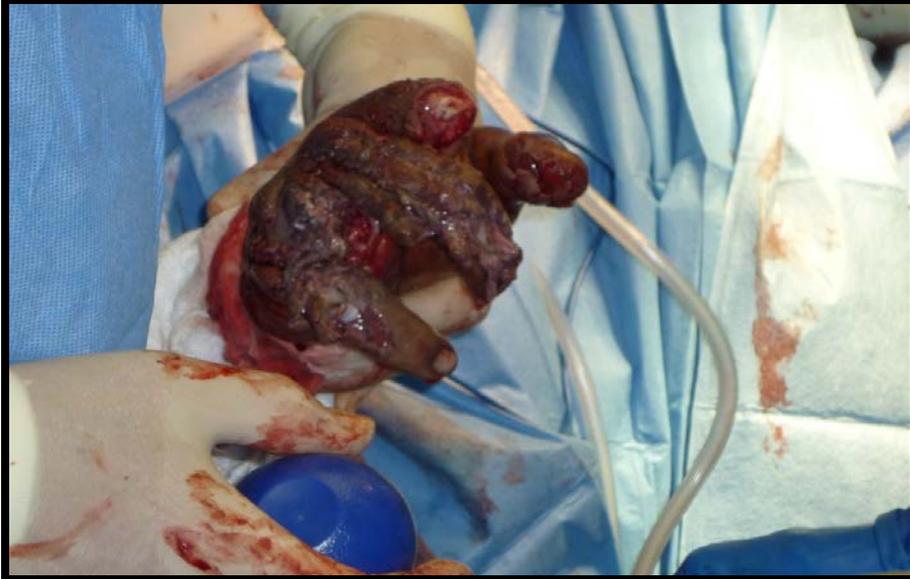
- 45 YO ANP IED BLAST
- MULTIPLE FACIAL LACERATIONS
- ANISOCORIA
- L FOOT MULTIPLE FXS
- OPEN L TIB/FIB FX
- R CALCANEUS FX
- TO OR FOR L FOOT AMPUTATION
- TRANSFERRED FOR CT HEAD/FURTHER TX

CASES



- 32 YO ANSG IED BLAST
- BACKSEAT PASSENGER IN PICKUP TRUCK
- HEAD LACERATION
- NO LOC
- MANGLED R FOOT
- TO OR FOR COMPLETION AMPUTATION & REPAIR OF HEAD LAC

CASES



- 19 YO ANA LAND MINE BLAST
- TRAUMATIC AMPUTATION OF ALL 4 EXTREMITIES
- PRESENTED ALERT AND ORIENTED HR 160'S
- RESUSCITATED TO HR 120S
- TO OR FOR DEBRIDEMENT/WASHOUT & COMPLETION AMPUTATIONS
- STUMPS LEFT OPENED
- TRANSFERRED FOR FURTHER TX

CASES



- ANA IED BLAST
- INHALATION INJURY
- MULTIPLE FACIAL LACS
- OPEN L FEMUR FX, OPEN L TIB-FIB FX
- OPEN R TIB-FIB FX
- TO OR FOR AMPUTATION L LEG AKA & EX-FIX R TIB-FIB
- DAMAGE CONTROL RESUSCITATION
- REQUIRED WALKING BLOOD BANK

CASES



- ANP MINE BLAST
- MULTIPLE SHRAPNEL WOUNDS
- DEGLOVING R ARM
- NO FRACTURES
- TO OR FOR WASHOUT

CASES



- **SUSPECTED INSURGENT GSW TO L CHEST**
- **TRAVERSED THORACIC CAVITY EXITING R SHOULDER**
- **FOLEY INSERTED INTO EXIT WOUND TO CONTROL BLEEDING AFTER RESUSCITATION**
- **TO OR FOR EXPLORATION & ANTERIOR THORACOTOMY**
- **RML LUNG CONTUSION, NO GREAT VESSEL DAMAGE**

CASES



- **ANSG RPG TO BUTTOCKS**
- **MASSIVE SOFT TISSUE DESTRUCTION**
- **LOSS OF EXTERNAL ANAL SPHINCTER**
- **OPEN COMMINUTED FX L ISCHIUM**
- **TO OR FOR WASHOUT & DEBRIDEMENT**
- **EX LAP & FECAL DIVERSION**
- **TRANSFER FOR FURTHER SURGERY**

CASES



- ANP GSW TO FACE
- MAINTAINED AIRWAY UNTIL BEGAN VOMITING
- COPIOUS BLOOD FROM NARES
- INTUBATED
- FOLEYS INSERTED
- GEL FOAM AND THROMBIN TO NARES
- TRANSFERRED FOR CT HEAD

CASES



- **US SOLDIER MORTAR BLAST**
- **SEVERE FACIAL TRAUMA**
- **PRESENTED W/ CRIC BUT NOT VENTILATING – SATS IN 40'S**
- **HEMODYNAMICALLY STABLE**
- **INTUBATED & HYPERVENTILATED**
- **GRAY MATTER NOTED FROM NARES**
- **TRANSFERRED FOR CT HEAD**

CASES



- **9 YO BOY HIT IED RIDING A DONKEY**
- **MULTIPLE TRAUMA ALL 4 EXTREMITIES**
- **OPEN FX/DISLOCATION R ELBOW W/ SEVERE SOFT TISSUE LOSS**
- **OPEN FX R FEMUR & PATELLA**
- **TO OR FOR WASHOUT EX-FIX**
- **TRANSFERRED FOR FURTHER TX**

CASES



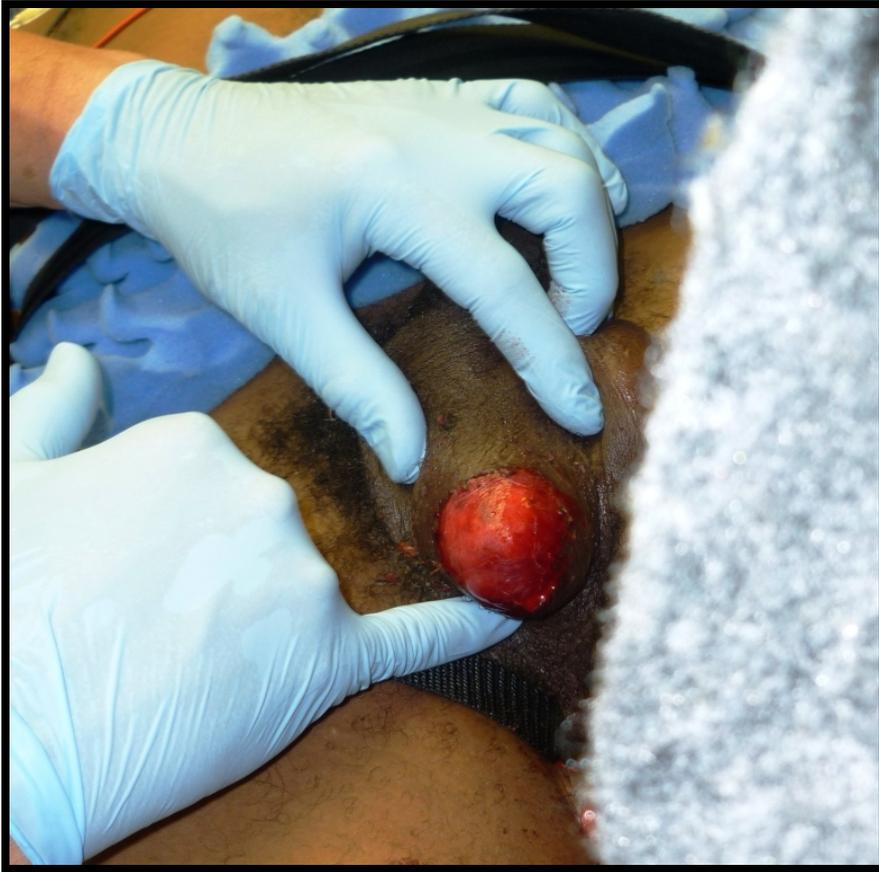
- 20 YO ANA IED BLAST
- MULTIPLE OPEN SKULL FRACTURES
- NOSE AVULSION
- PRESENTING HR 120 - SBP > 100
- DECOMPENSATED IN RESUS – HR TO 180'S SBP <70
- DPL GROSS BLOOD
- TO OR FOR EX-LAP
- R KIDNEY, LIVER AND SPLEEN INJURIES
- DAMAGE CONTROL RESUS REQUIRED 19 PRBC, 4 FWB, 9 FFP, 2 CRYO, 9.6 MG FACTOR VII
- TRANSFERRED FOR FURTHER TX

CASES



- 3 YO GSW TO FACE
- GCS 15
- NO VIOLATION OF OROPHARYNX
- WOUNDS CLEANED AND SUTURED
- TRANSFERRED FOR CT FACE

CASES

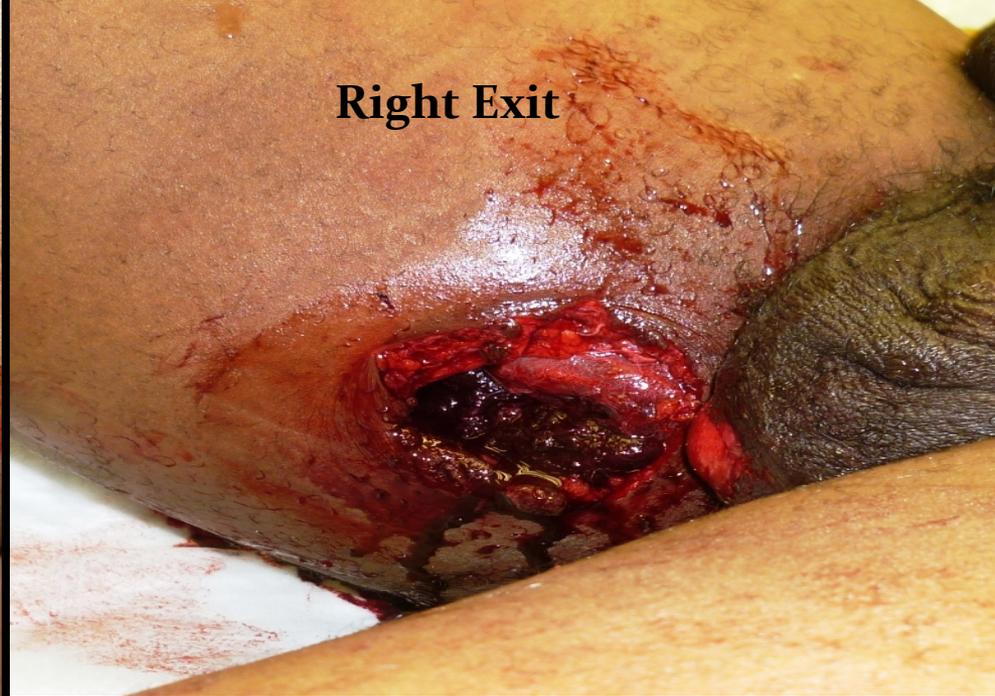


- **28 YO US SOLDIER SHOT THROUGH THIGHS WITH MK-19 GRENADE ROUND**
- **THROUGH AND THROUGH BOTH THIGHS**
- **NO FRACTURES**
- **SCROTAL LACERATION**
- **NEUROVASCULAR INTACT**
- **TO OR FOR WASHOUT**

Right Entrance



Right Exit



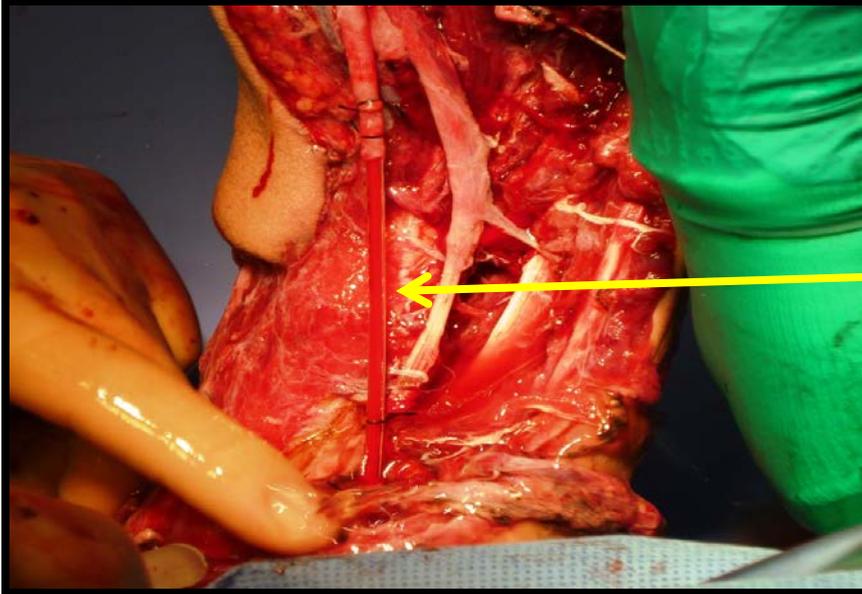
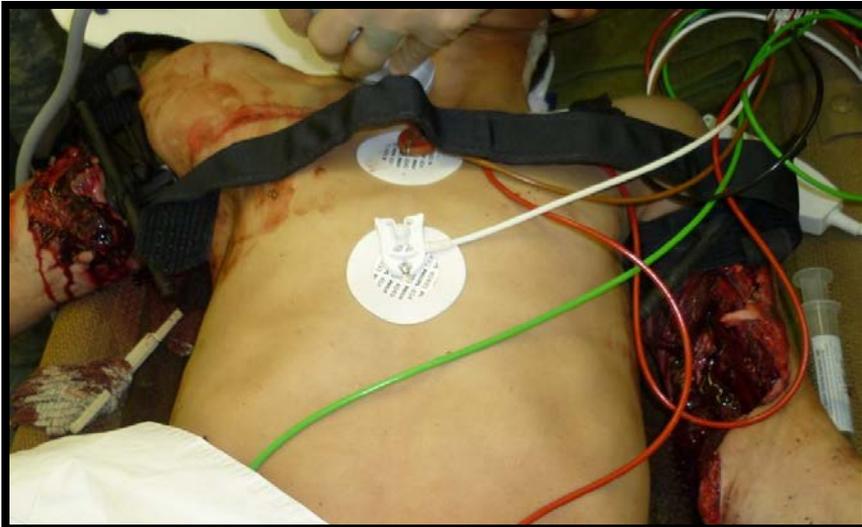
Left Entrance



Left Exit



CASES



- 15 YO AFGHAN BOY GOT ARMS CAUGHT IN WHEAT THRASHER
- MASSIVE SOFT TISSUE DAMAGE TO BUE
- NO PULSE IN LUE
- TO OR FOR WASHOUT
- R BASILIC VEIN LAC
- VASCULAR SHUNT PLACED IN L BRACHIAL ARTERY

MASS CASUALTY EVENTS

- **TWO HELO CRASHES LESS THAN ONE MONTH APART**
- **14 AND 11 PATIENTS**
- **NO LIFE THREATENING INJURIES WITH FIRST CRASH**
- **SECOND CRASH**
 - **2 PATIENTS BROUGHT TO FST WITH CPR IN PROGRESS**
 - **ONE PATIENT WITH MULTIPLE FRACTURES - REQUIRED FWB**
- **4 AFGHAN BOYS HIT BY IED**
 - **FIRST PEDIATRIC PATIENTS**
 - **2 REQUIRED SURGERY**
 - **ONE LUE , LLE AND RLE COMPLETION AMPUTATION**
 - **ONE MULTIPLE SHRAPNEL WOUNDS REQUIRING WASHOUT**

TRANSFERS

- **COORDINATED BY TACTICAL OPERATIONS CENTER (TOC)**
- **SENIOR ENLISTED MANAGED ALL ADMINISTRATIVE ASPECTS AND TRANSFERS**
- **ALL PATIENTS FLOWN TO NEARBY ROLE 3 (KANDAHAR) OR LOCAL AFGHAN HOSPITAL (KRMH)**
- **UTILIZE 9-LINE MEDICAL EVACUATION FORMAT**
- **LIMITED BY WEATHER AND TIMING OF TRANSFERS**
- **LONG-TERM HOLDING OF PATIENTS EXHAUSTED PERSONNEL AND RESOURCES**
- **DIFFICULTY TRANSFERRING LOCAL NATIONALS ONCE THEY ENTER THE SYSTEM**

LIMITATIONS

- **SMALL HOLDING CAPABILITY**
 - 5 TRAUMA BEDS, 3 ICU BEDS
 - AIR FORCE ADDED AT 6TH MONTH EXPANDED CAPACITY
 - ADDITIONAL MEDICS & ICU/ICW NURSES
- **LIMITED BY OR BEDS AND SURGICAL EQUIPMENT**
 - LIFE AND LIMB-SAVING SURGERIES ONLY
 - STABILIZE & TRANSPORT
 - NARKOMED VS DRAWOVER ANESTHESIA MACHINES
- **1 OF 1 IN MANY SPECIALTIES**
 - DRAINS RESOURCES, ESPECIALLY IF DELAYS IN TRANSFERS
 - AIDED WITH ADDITION OF AIR FORCE PERSONNEL

LESSONS LEARNED

- **MODIFY ARMY FST MODEL**
 - **ADDITIONAL OR TECHS, LESS FMF CORPSMEN**
 - **CONSIDER AN XRAY TECH**
 - **ONE LESS GENERAL SURGEON, ADD ER/FP MEDICAL OFFICER**
 - **ADMIN MSC OFFICER .VS. PA**
- **PLAN FOR EQUIPMENT/SUPPLIES EARLY ON**
- **PREPARE FOR PEDIATRIC PATIENTS**
- **DON'T RELY ON 9-LINE REPORTS**
- **DEBRIEFING EVERY TRAUMA RESUSCITATION VERY BENEFICIAL**

LESSONS LEARNED

- **NATIONALITY OF PATIENTS DETERMINED EXTENT OF INJURIES**
- **PATIENTS COME IN GROUPS OF FOUR**
- **BLAST > ACCIDENTS > GSW > MEDICAL**
- **VAST MAJORITY OF CASES INVOLVED ORTHOPEDIC INJURIES**
- **EVEN AMONG AFGHAN PATIENTS – INJURIES WERE EXTREMITY AND HEAD.**
- **AMPUTATIONS = EXTERNAL FIXATION = WASHOUTS > XLAPS > RECONSTRUCTIONS > ELECTIVE**
- **AVOID DOING TOO MUCH SURGERY**
- **DON'T TRUST XRAYS / ULTRASOUNDS**

ACHIEVEMENTS

- **NO PREVENTABLE DEATHS**
- **NO SURGICAL AIRWAYS**
- **ESTABLISHED AN EFFECTIVE MASS CASUALTY PLAN**
- **ESTABLISHED A RAPID FRESH WHOLE BLOOD PROGRAM**
- **AVOIDED MULTIPLE MEDEVACS OF COALITION FORCES FOR NON CRITICAL SURGERY**
- **KEPT THE TEAM INTACT**

PREPARATION

- **REVIEW ATLS/TNCC/TCCC PRIOR TO DEPLOYMENT**
- **TRAINING, TRAINING, TRAINING**
- **MANAGE “DOWN TIME” EFFECTIVELY**
- **PREPARE FOR THE WORST**
- **BE PREPARED TO FUNCTION OUTSIDE YOUR AREA OF EXPERTISE**
- **TAKE CARE OF EACH OTHER**

RECOMMENDATIONS

- **INCREASE TRAINING PRIOR TO DEPLOYMENT**
- **STREAMLINE EQUIPMENT PROCUREMENT**
- **ESTABLISH A CLEARER CHAIN OF COMMAND**
- **CLARIFY MEDICAL RULES OF ENGAGEMENT**



QUESTIONS?