
**The Second Israel – Lebanon War
The Clinical Experience**

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Clinical Experience - RMC

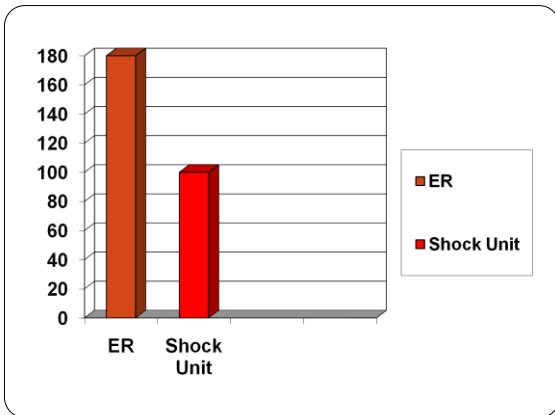
15/08/2006 -- 12/07/2006

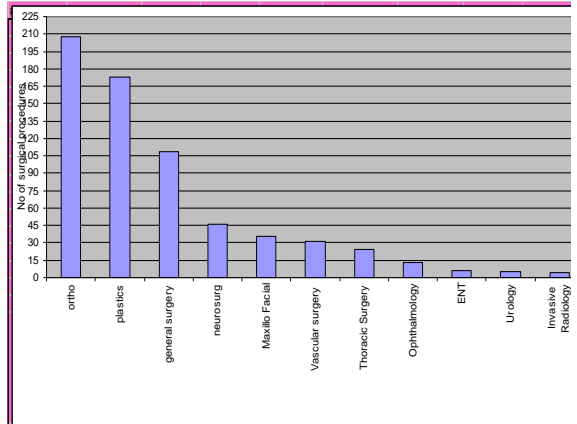
No of wounded pts

849

Soldiers : 328

Civilians : 521





Injured soldiers evacuated to RAMBAM Medical center summer 1982

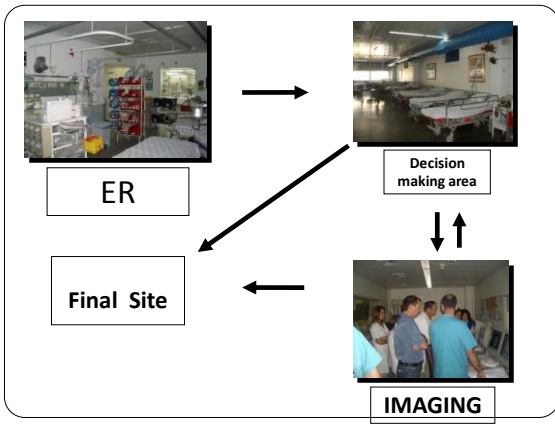
Site of injury	Casualties (n=694) (%) 1982	Casualties (n=266) (%) 2006
Burns	174 (25.1%)	25 (9.3%)
Head	104 (15.8%)	53 (20%)
Face	133 (19%)	65 (24%)
Neck	37 (5.9%)	11(4%)
Chest	123 (18.7%)	52 (19.5%)
Abdomen	112 (16.4%)	35 (13%)
Spine	7 (1.2%)	10 (3.7%)
Extremities	465 (67.1%)	242 (90 %)

Tal Or E, Hana Geva, Moshe Michelson.1991

Casualties admitted to RAMBAM medical center during two military conflicts

ISS	Soldiers 2006 @ N=213	2006 Civilians N=68	soldiers 1982 # N= 694
1-8	146(68.5%)	36 (52.2%)	325 (46.8%)
9-15	41(19.2%)	15 (23.9%)	226 (32.5%)
16-24	18(8.4%)	7 (10.4%)	56 (8%)
25+	8 (3.7%)	9 (13.4%)	87 (12.5%)

#June 6th to Sept 20th 1982 ,@ July 12th to August 15th 2006



Tourniquet Use

- 11 Wounded soldiers

Average time (min) 188
 Range (min) 35 - 420

ER Thoracic procedures

- 1 ER Thoracotomy
- 12 Chest drain insertion
 - 1 Bilateral
 - 11 Unilateral

Use of imaging techniques.

Imaging Modalities

Imaging studies

<p><u>2006</u></p> <ul style="list-style-type: none"> ● US (FAST) ● Plain films ● CT ● CTA ● Angiography 	<p><u>1982</u></p> <ul style="list-style-type: none"> ● US not utilized ● Plain films ● Fluoroscopy ● CT – learning stage ● Angiography
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U.S

- 102 Pts

Soldiers : 78 (76.5%)

Civilians : 24 (23.5%)

(Male 98, Female 4)

FAST Results correlated to CT and Laparotomy

<u>FAST</u>	<u>TP</u>	<u>TN</u>	<u>FP</u>	<u>FN</u>
<u>Soldiers (78)</u>	13	60	1	4
<u>Civilians (24)</u>	2	20	1	1
<u>Total (102)</u>	15	80	2	5


FAST compared with CT and Laparotomy

<u>FAST</u>	<u>Sensitivity %</u>	<u>Specificity %</u>	<u>PPV %</u>	<u>NPV %</u>	<u>Accuracy %</u>
Soldiers	76.5	98.4	92.9	93.7	94
Civilians	76.6	95.2	67.6	95.2	91.6
Total	75	97.6	88.2	94.1	93.1

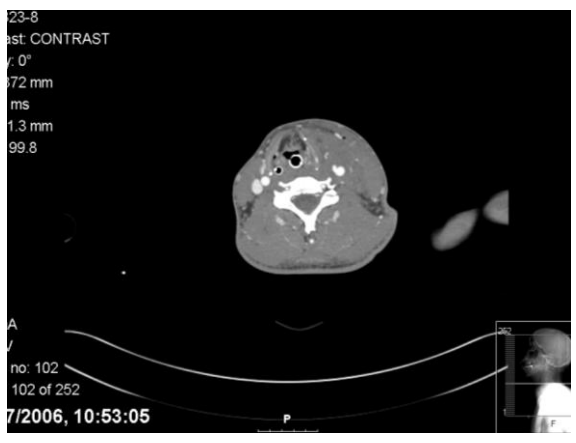
Imaging Modalities

Number of wounded who underwent CT
173 (42%)

Peripheral CT Angiography




23-8
ast: CONTRAST
r: 0°
72 mm
ms
1.3 mm
99.8

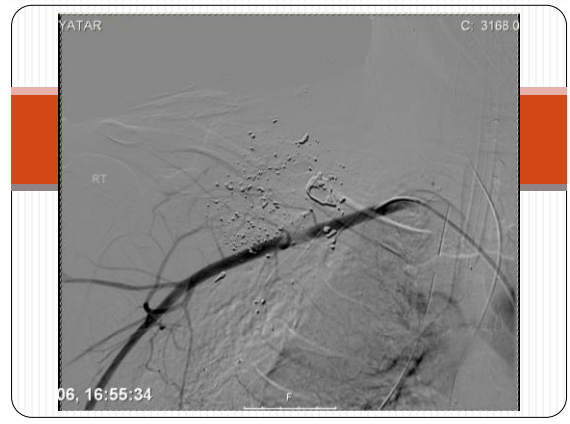


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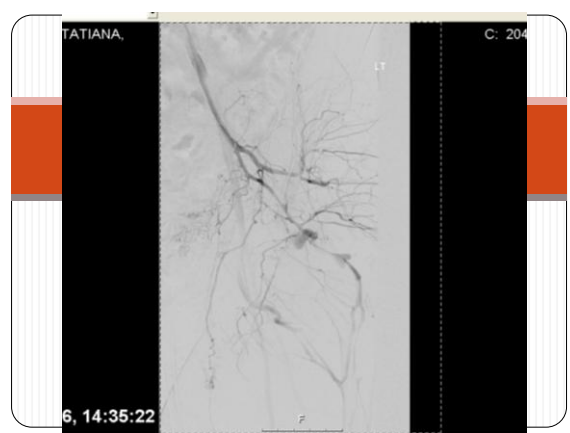
Angiography



Rambam Med Center
WL: 2948.0, WW: 4095.0
11/08/2006







Vascular Trauma

Vascular Trauma

39 Vascular Injuries (7.6%)

Soldiers : 33 (10.8%)
 Civilians : 6 (3%)

Incidence of Combat Vascular Trauma : 0.2-4%
(DeBakey M, Rich N, Mattox W)

Recent reports from Iraq : 6.8%
(Clause, Stames)

Vascular Trauma

<u>Mean</u>	<u>Range</u>
• Age (year) 29	20 – 53

• Average time from injury – hospital : 6.54 hrs

24% > 10 hrs.
 4% > 20 hrs.

Vascular Trauma

Injuries According to Anatomy

	<u>Arteries</u>	<u>Veins</u>
Head & Neck	6 (15%)	1 (8%)
Abdomen & Pelvis	5 (13%)	2 (17%)
Upper Extremities	10 (26%)	2 (17%)
Lower Extremities	18 (46%)	7 (58%)
Total	39 (100%)	12 (100%)

Mean ISS 16 !!!

Median products received according to Injury Severity Score. (MEAN)						
	PULSE	CRYSTALLOIDS	PC	FFP	PLAT	CRYO
ISS<16 (N=34)	91 (163)	1000 (97)	4 0-17	1.5 0-18	0 0-12 M(1.9)	0 0-20 M(3.2)
ISS≥16 (N=26)	110.29 (22)	3000 (21)	7 (0-45) P=0.026	13 (0-54) P=0.002	0 0-48 M(7.4)	0 0-40 M(6.1)
34 PATIENTS WITH ISS< 16 HAD BLOOD 26 PATIENTS WITH ISS> 16 HAD BLOOD Results are presented as median and range						

TRANSFUSION- ISS MEDIAN 17 (6-75) MASSIVE								
N=21	HB	PLT X10 ⁹ /L	B.E.	PH	H ₂ CO ₃	INR	PTT	FIBRINOGEN
ER (RANGE)	10.6 (7.3-13.7)	262 84-464	-5.8 -22-0.4	7.318 6.92-7.5	20 7.4-25	1.26 1.12-2.2	33" 24-57	N.D
1H-2H	8 6.9-11.5	122 78-257	-3 -15 -- -2	7.28 7.01-7.34 N=3	22 13 -24	1.55 1.24-2.31	44" 23-89	119 62-183
H4-H8	9.9 6.6-15.1	120 84-173	-1.6 -7.8 - +10	7.355 7.2-7.4	22.6 18 - 35	1.35 1.03-2.33	41" 30 - 53	181 102 - 245
24H	10.52 7.9-14.4	98 40-213	0.7 -2.2- +6.4	7.42 7.29-7.49	25.4 20.3-31.2	1.27 1.01-1.47	38.9 30.7-43.9	272 49-358

Summary

- Prolonged Evacuation Time To Medical Facility.
- High Numbers of Patients with Hypovolemic Shock .

Summary

- **High numbers of Occular Injuries**
- **High number of Vascular Injuries**
- **Few soldiers with head injury**

Summary

- **Extensive Use for Imaging Techniques (CTS, US, Invasive Radiology)**
- **Multi – disciplinary Care**