UNIVERSITY of MARYLAND

NATIONAL STUDY CENTER for TRAUMA / EMS

CIREN Quarterly Meeting

Offset Frontal Crashes

March 16, 2001

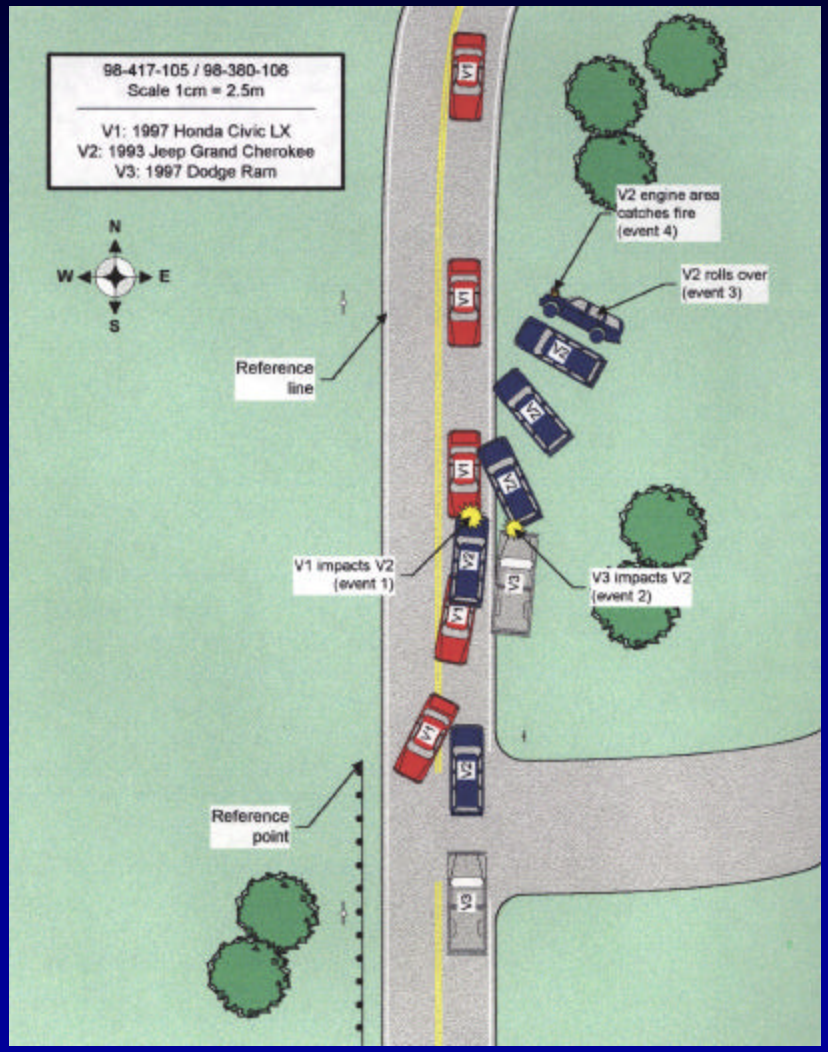
UNIVERSITY of MARYLAND

NATIONAL STUDY CENTER for TRAUMA / EMS

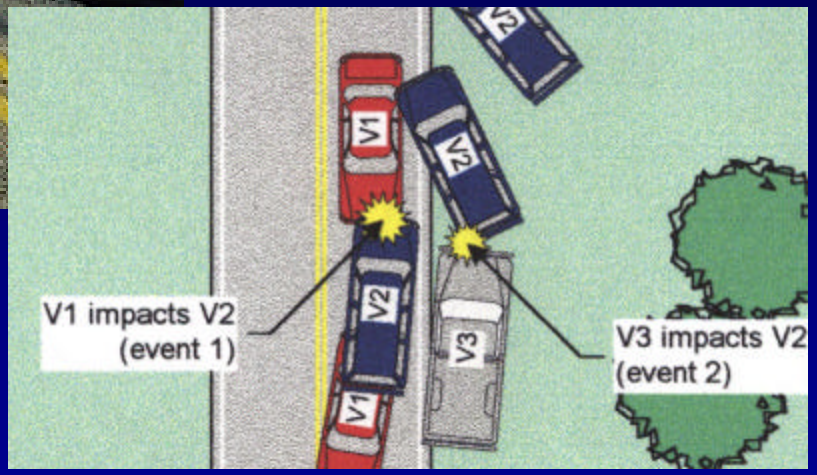
CIREN

Cases 105 - 106

CIREN Case 105 - 106



Vehicle 1 - Approach

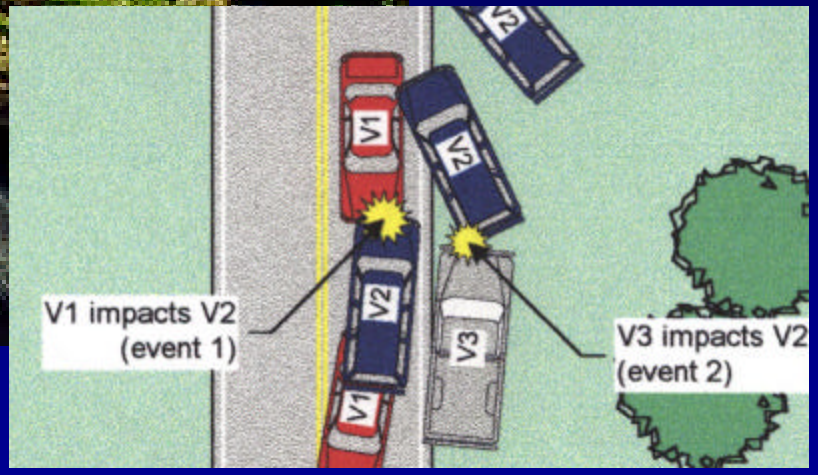


Vehicle 1 - Point of Impact
Event 1, Vehicle 1 vs Vehicle 2

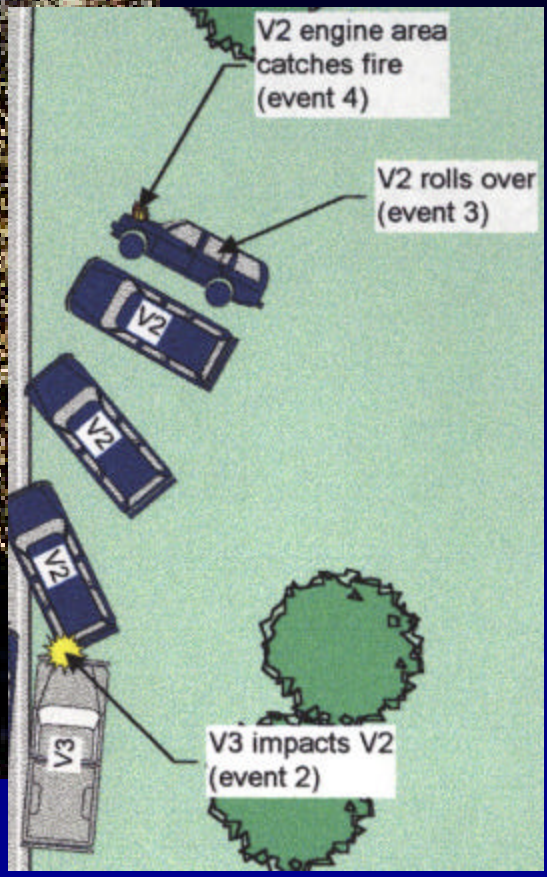
Vehicle 1 - Final Rest

Vehicle 1 - Look Back from Final Rest

Vehicle 2 - Approach



Vehicle 2 - Point of Impact
Event 1, Vehicle 2 vs Vehicle 1



Point of Impact, Vehicle 3 vs Vehicle 2
V2 Rollover & Fire, V2 Final Rest

Vehicle 2 - Look Back from Final Rest

CIREN Case 105

1993 JEEP CHEROKEE

CIREN Case 105

1993 JEEP CHEROKEE

CIREN Case 105

1993 JEEP CHEROKEE

Window Help

Previous Ne

Object Contacted

Category	Vehicle	Deformation Location	F Front
Object	Vehicle# 1	Long/Lateral	L Left - front or rear
Force Direction	0 degrees	Vertical/Lateral	E Everything below belt line
Increment	00 No Shift	Distribution	W Wide Impact Area
Clock	12	Extent	Three
Over/Underride		Summary	12FLEW3

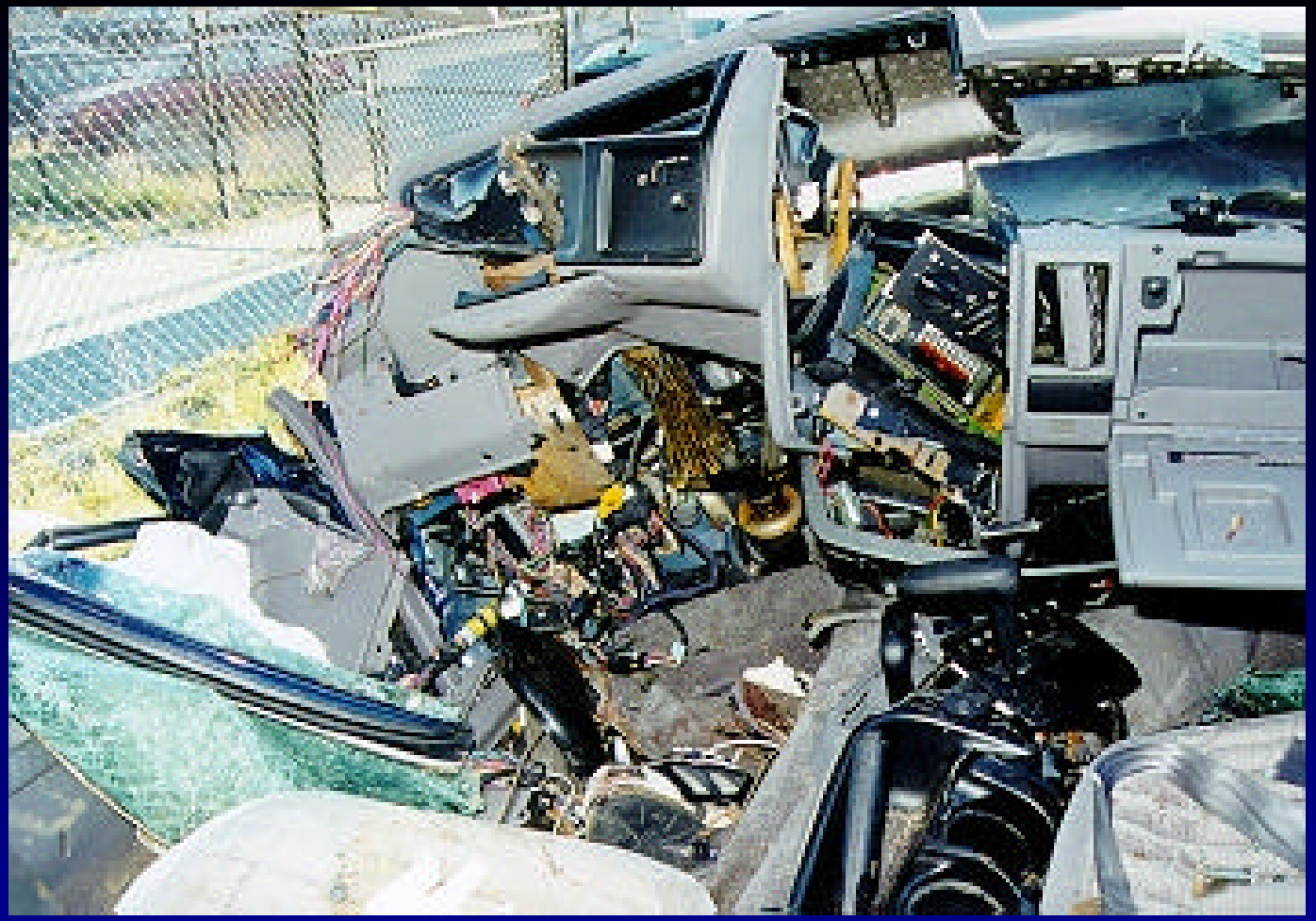
Vehicle 2 - Front

Vehicle 2 - Left Front

Vehicle 2 - Case Occupant Position

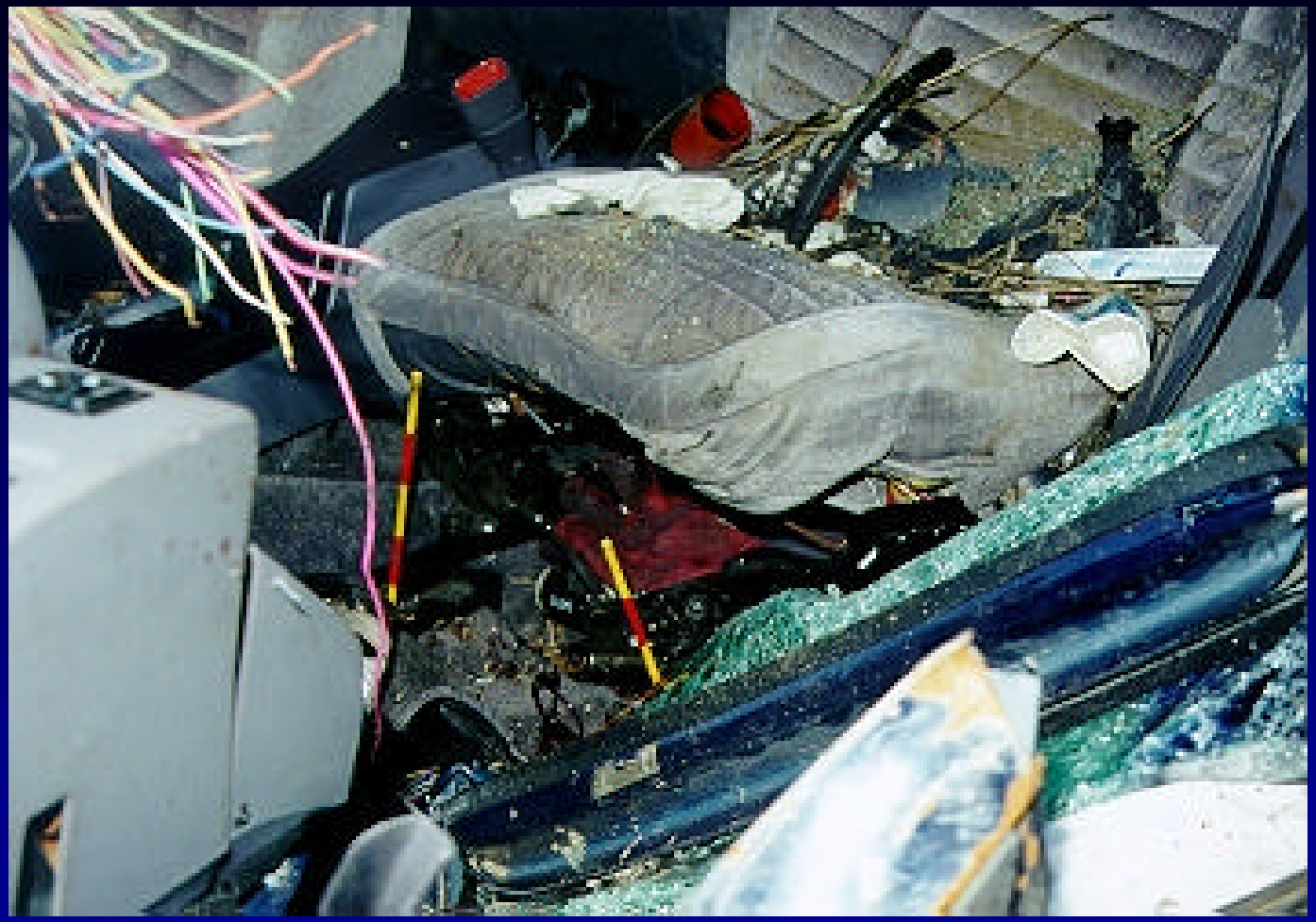
Front Seat	Left	Interior	Instrument panel lef	71	56	15	>= 15 to < 30 cms	Longitudinal
Front Seat	Middle	Interior	Instrument panel cen	71	61	10	>= 8 to < 15 cms	Longitudinal
Front Seat	Right	Interior	Instrument panel rig	71	66	5	>= 3 to < 8 cms	Longitudinal

Vehicle 2 - Case Occupant Position
Instrument Panel Intrusion



Row	Position	Area	Intruded Component	Comparison	Intruded	Intrusion	Magnitude	Crush Direction
Front Seat	Left	Interior	Toe pan	117	101	16	>= 15 to < 30 cms	Longitudinal
Front Seat	Left	Interior	Floor pan (includes	49	34	15	>= 15 to < 30 cms	Vertical

Vehicle 2 - Case Occupant Position
Toe Pan Intrusion



Vehicle 2 - Left Front Seat Failure
Deformed by Intruded Floor

Vehicle 2 - Case Occupant Seat Belt Use
Belt Cut by Rescue Personnel

	Contact	Area	Component	Occ #	Body Region	Evidence	Confidence
▶	A	Front	Steering wheel rim	1	Chest	Deformed	CERTAIN
	B	Air Bag	Air bag-driver side	1	Chest	Blood	CERTAIN

Vehicle 2 - Case Occupant Contact Point
Steering Wheel Rim

	C	Front	Left instrument panel and below	1	Knee - Left	Cracked	CERTAIN

Vehicle 2 - Case Occupant Contact Point
Left Instrument Panel

	D	Front	Left instrument panel and below	1	Knee - Right	Cracked	CERTAIN

Vehicle 2 - Case Occupant Contact Point
Left Instrument Panel

E	Floor	Floor (including toe pan)	1	Foot - Left	Other (Specify)	CERTAIN

Vehicle 2 - Area of Entrapment
Shoe Jammed in Intruded Floor Pan

CIREN Case 105

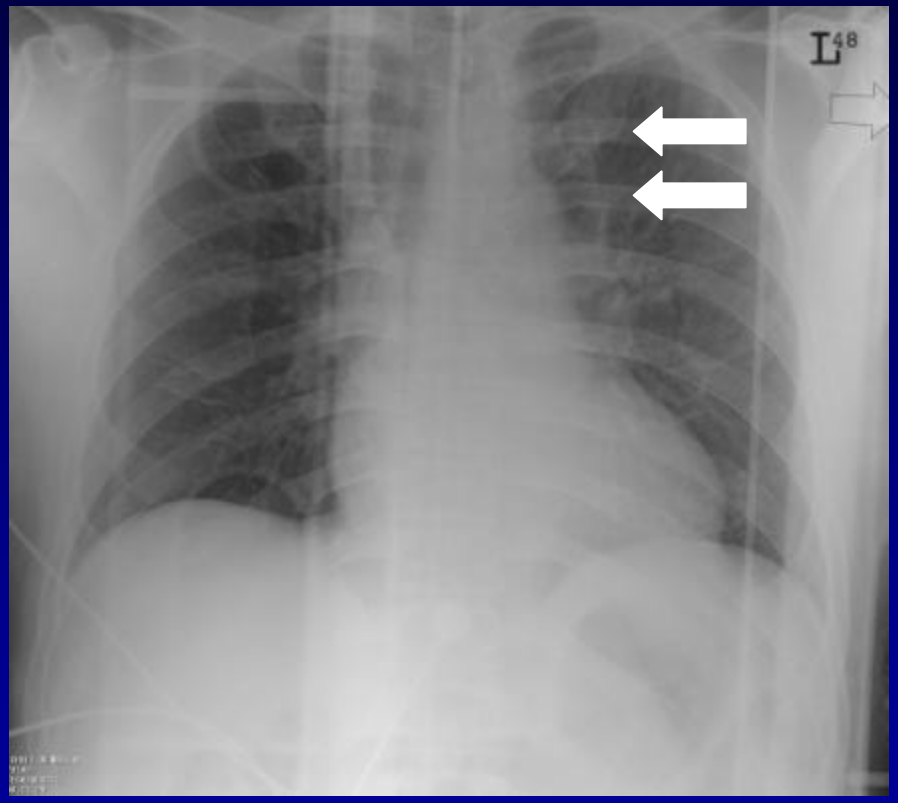
1993 JEEP CHEROKEE

EMS / SHOCK TRAUMA CENTER

- MVC driver male
- Vitals:
  - -BP = 83 / 67
  - -HR = 75
  - -RR = 20
  - -BS = clear
  - -GCS = 15
- Obvious L.E. fxs

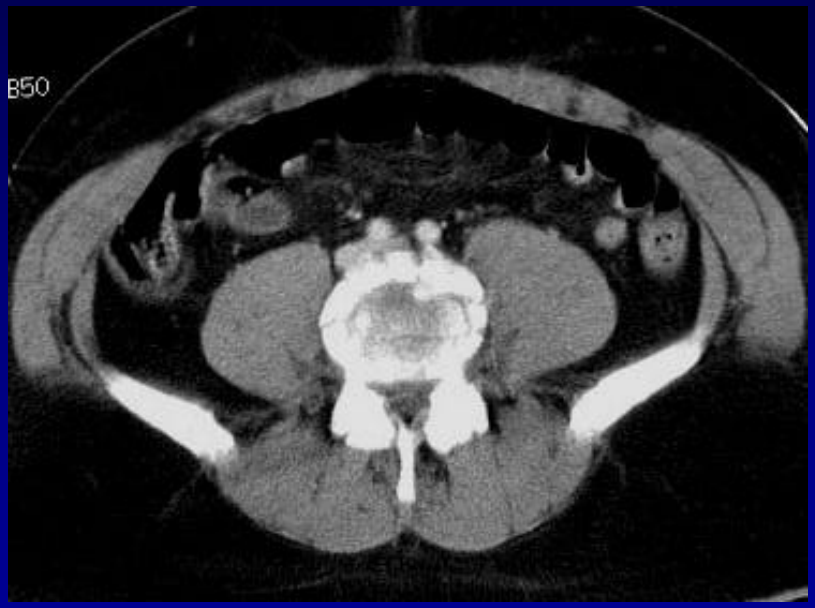
CIREN Case 105

LEFT RIB FRACTURES 3 / 4



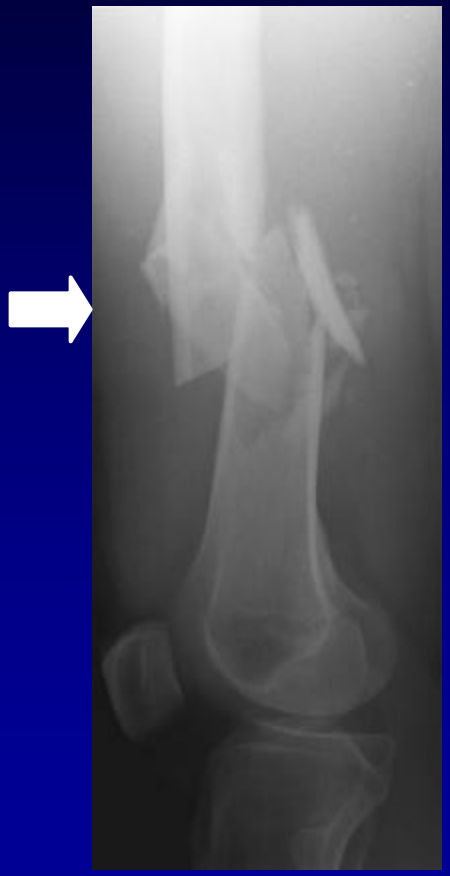
CIREN Case 105

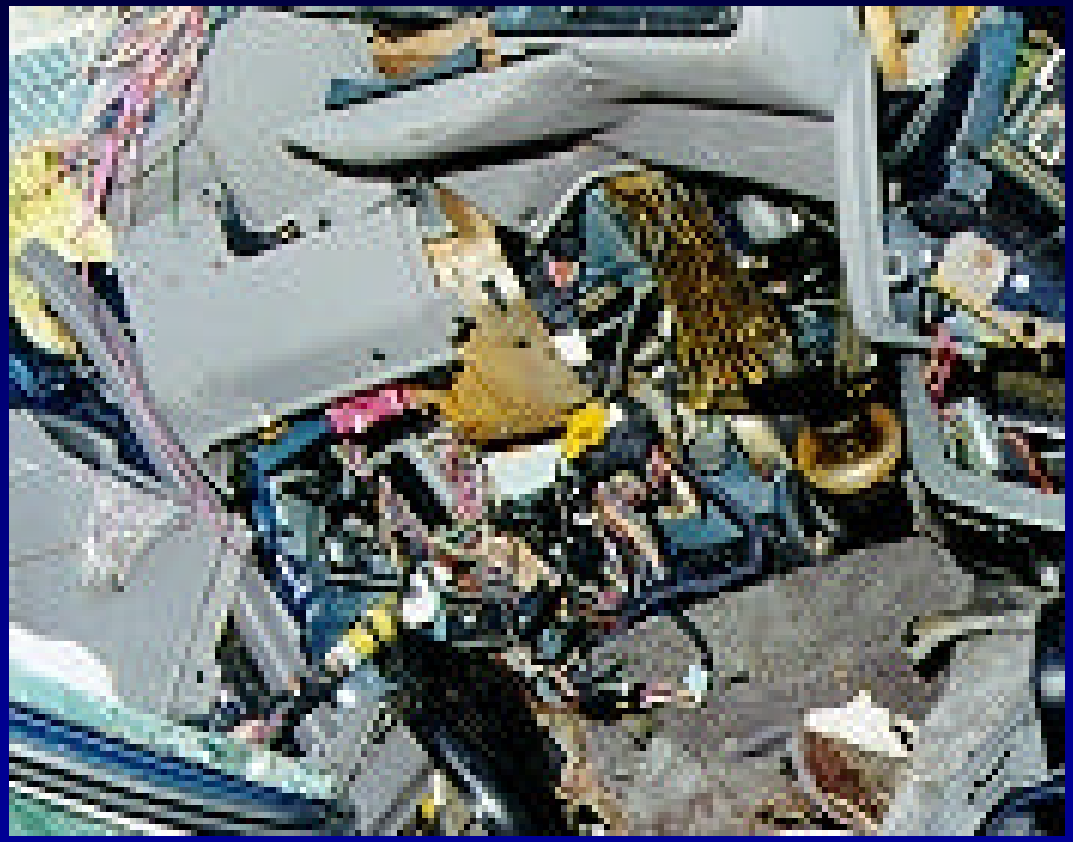
LUMBAR SPINE FRACTURE L 4



CIREN Case 105

LEFT FEMORAL FRACTURE





CIREN Case 105

RIGHT OPEN GR 3A+ TIB / FIB FRACTURES

RIGHT LAT. MALLEOLUS FRACTURE

CIREN Case 105

RIGHT OPEN GR 3A+ TIB / FIB FRACTURES
RIGHT LAT. MALLEOLUS FRACTURE

- Angiography showed spasm at the level of the fracture, with adequate circulation distally. After fixation the blood supply returned to normal.

CIREN Case 105

LEFT METATARSAL 3 - 5

LEFT PHALANGES 1 - 5 FRACTURES

CIREN Case 105

RIGHT FOOT FRACTURES

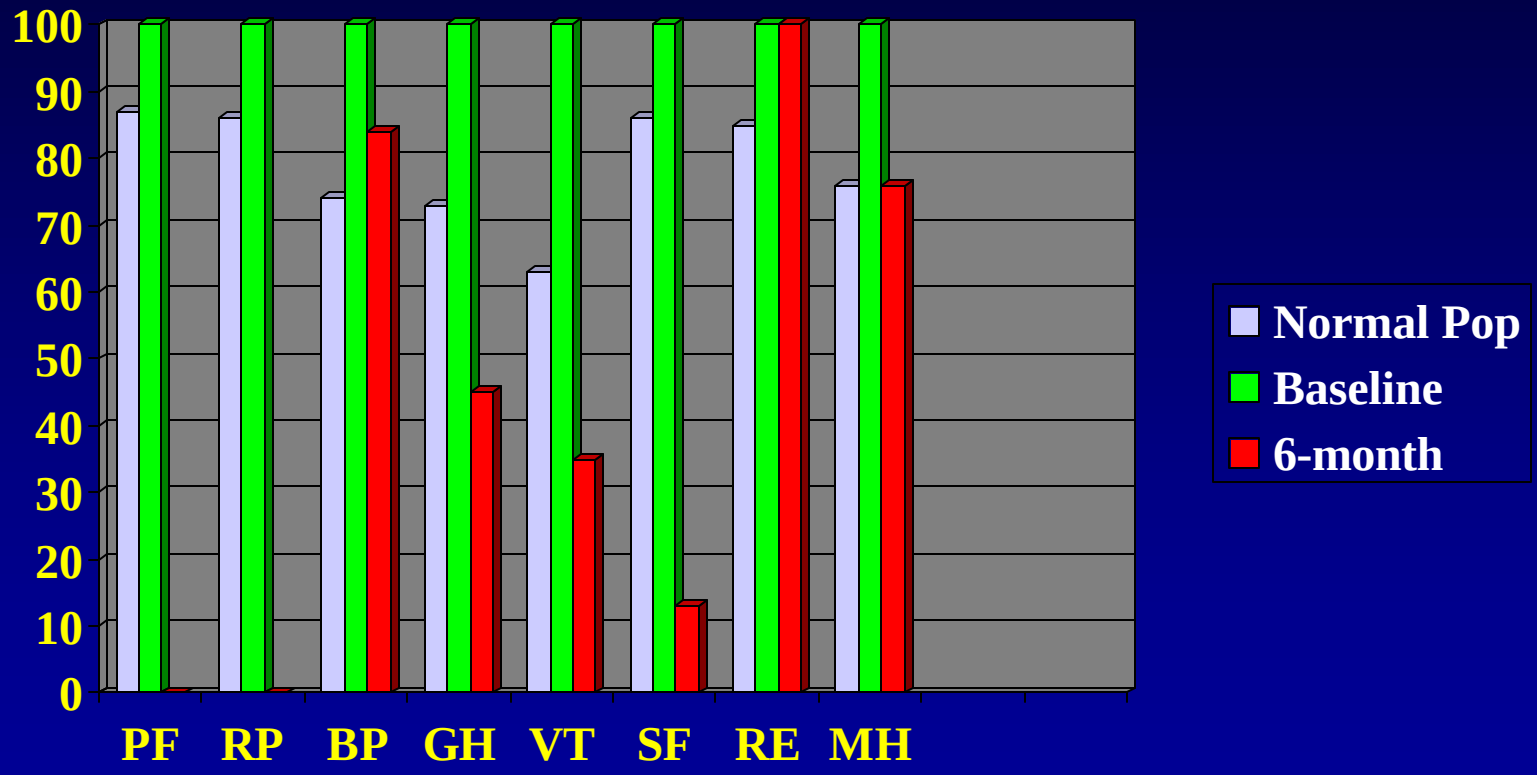
CIREN Case 105

POST OP FIXATION

CIREN Case 105
PROCEDURES

- Admission
  - angiography right leg
  - ex - fix right tib / fib fractures
  - IM nail left femur
- Day 4 - I&D right tibia
- Day 7 - I&D and closure right tibia
- Day 12 - body cast L - 4 fracture

SF-36 (Case 105)



CIREN Case 105

MEDICAL COST

• Hospital	$ 107,058
• Professional	$ 33,276
-RNA	$ 2,709
-Rehab	$ 16,643
-Cust. Care	$ 6,000
-O.P. Rehab	$ 2,875
• Total	$ 168,561

CIREN Case 105 - 106

1993 JEEP CHEROKEE / 1997 HONDA CIVIC

Total cost about 250,000