Pelvic fractures and associated injuries; Starship Experience

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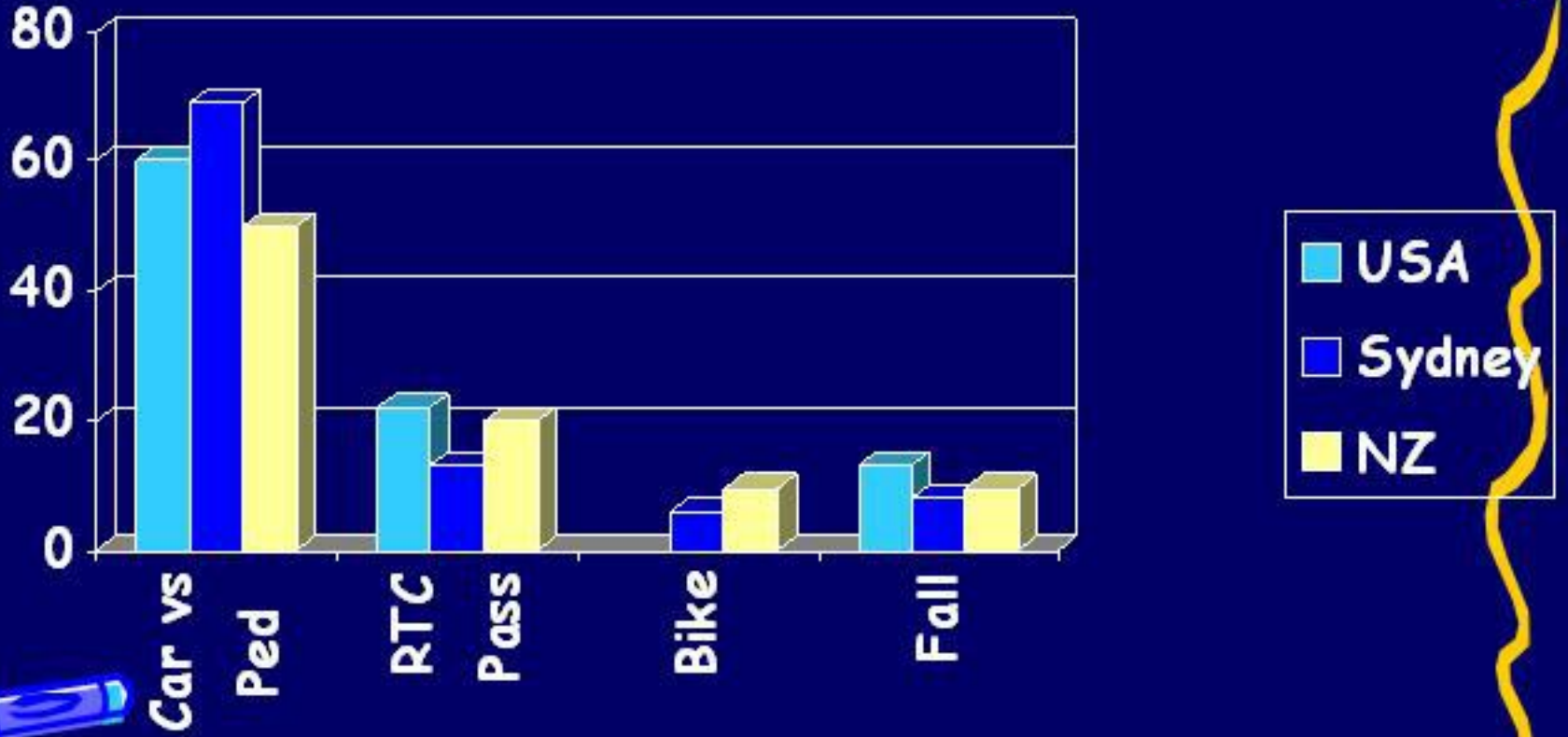
Et al

Mechanism

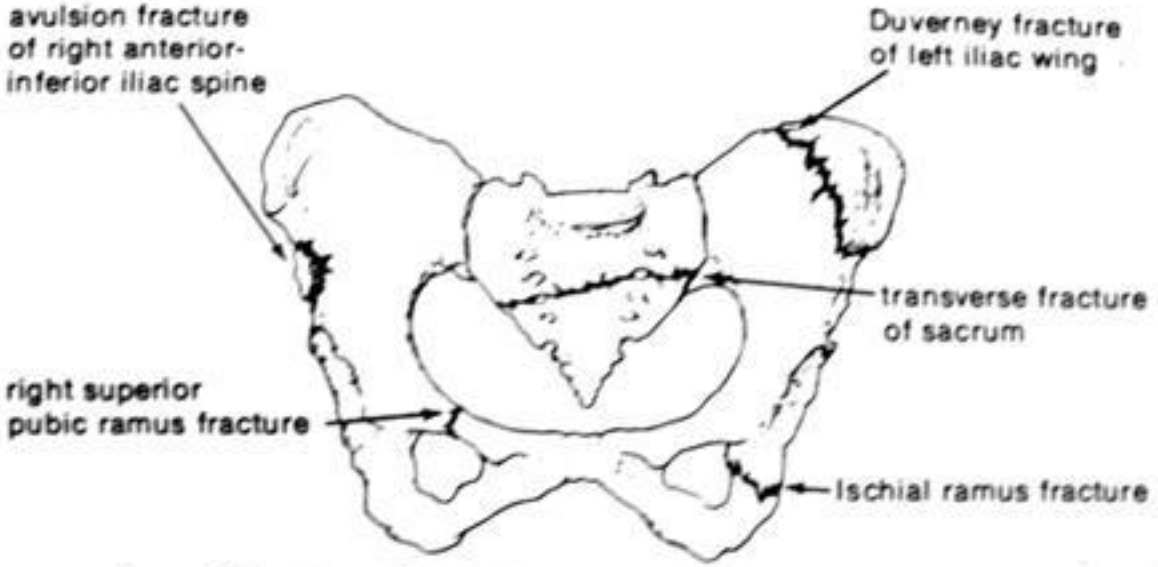


Classification

- Key and Conwell
  - Kane modification 1975
- Letournel 1980
- Bucholz 1982
- Tile 1983
- Torode and Zeig 1985
- Young and Burgess 1986

Classification

Type	Starship	Fracture Geometry
I	58%	No break in pelvic ring
II	20%	Single break in pelvic ring
III	7%	
IV	10%	
Multiple	5%	



Type I: Fracture of individual bones without break in pelvic ring. Examples shown above.

Classification

Type	Starship	Fracture Geometry
I	58%	No break in pelvic ring
II	20%	Single break in pelvic ring
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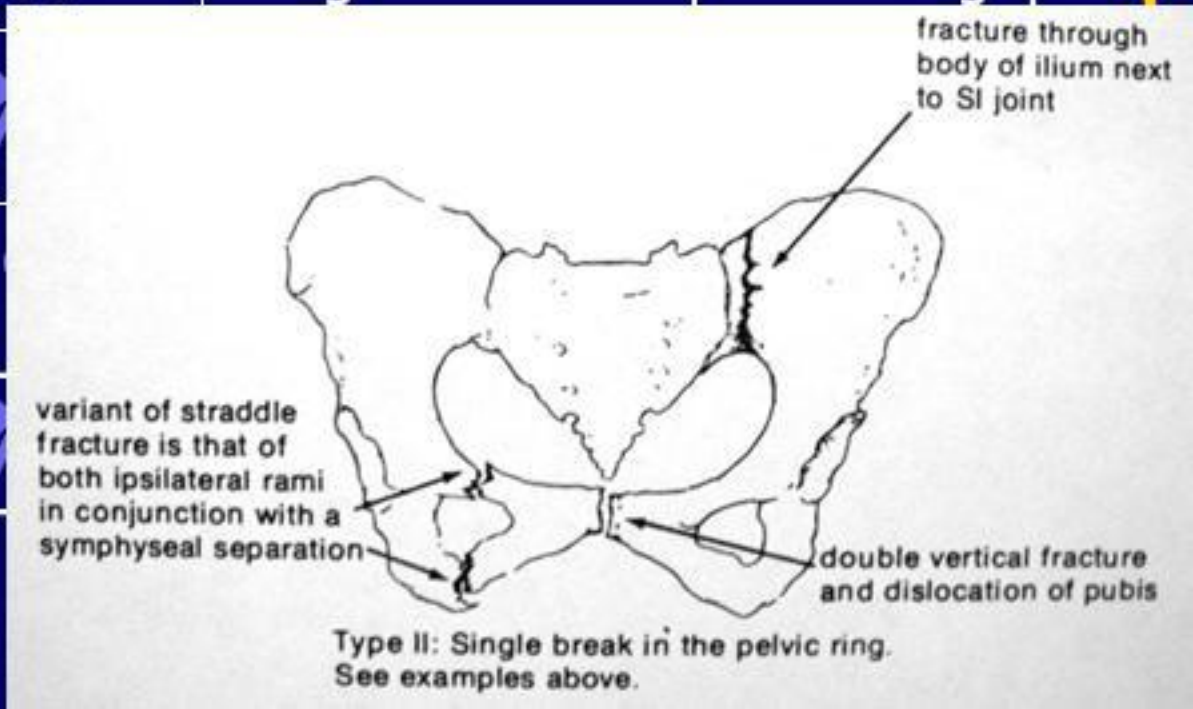
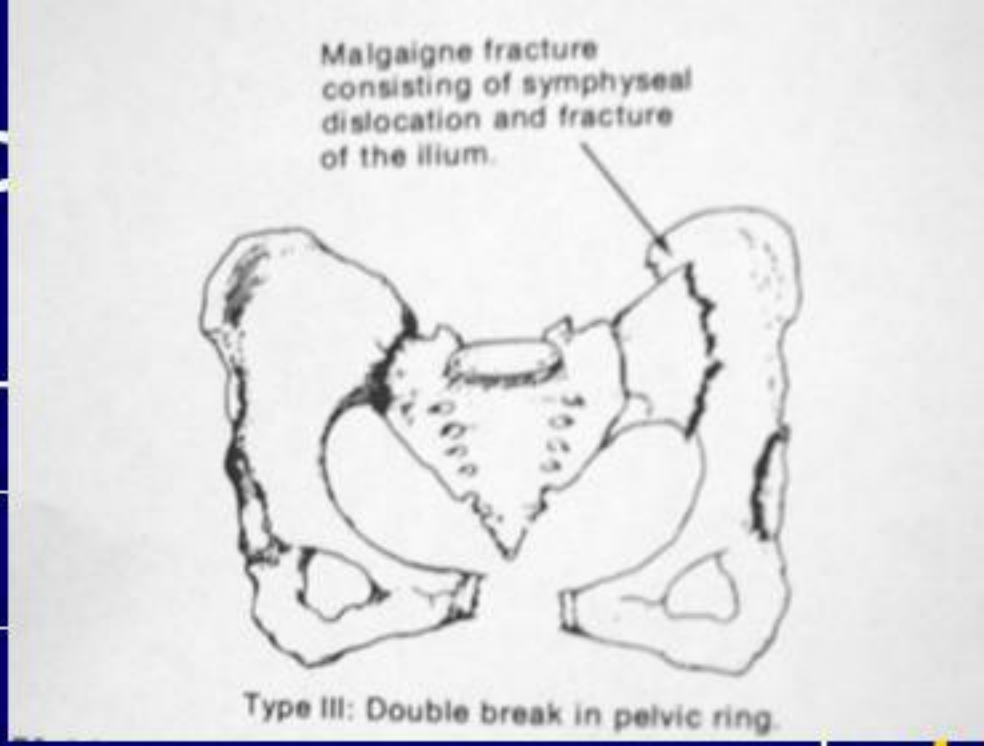


Classific

Type	Starship	
I	58%	
II	20%	
III	7%	Double break in pelvic ring (unstable)
IV	10%	Isolated fractures of the acetabulum
Multiple	5%	Types II & IV or III & IV

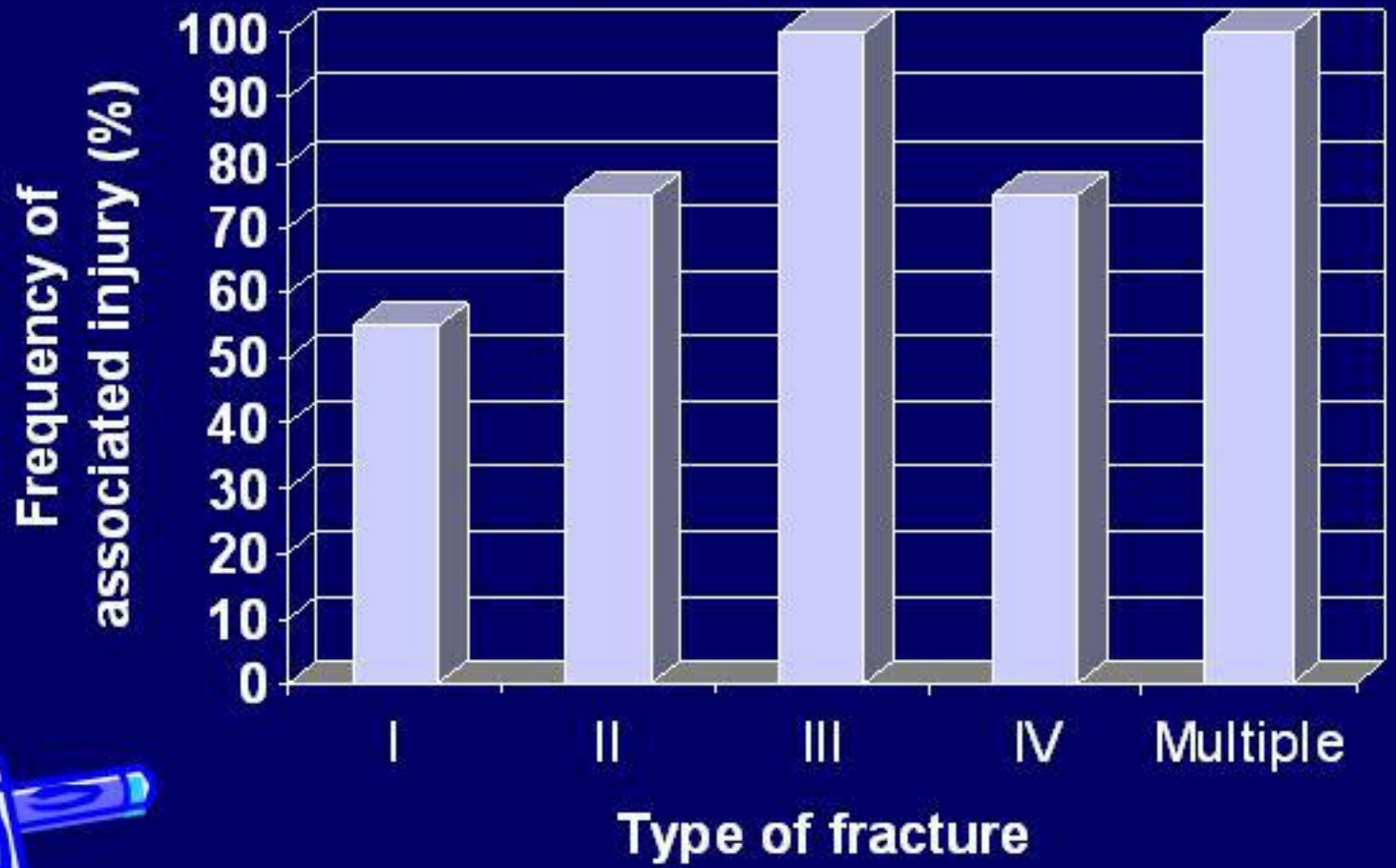


Type III: Double break in pelvic ring.

Classification

Type	Starship	Fracture Geometry
I	58%	No break in pelvic ring
II	20%	Single break in pelvic ring
III	7%	Double break in pelvic ring (unstable)
IV	10%	Isolated fractures of the acetabulum
Multiple	5%	Types II & IV or III & IV

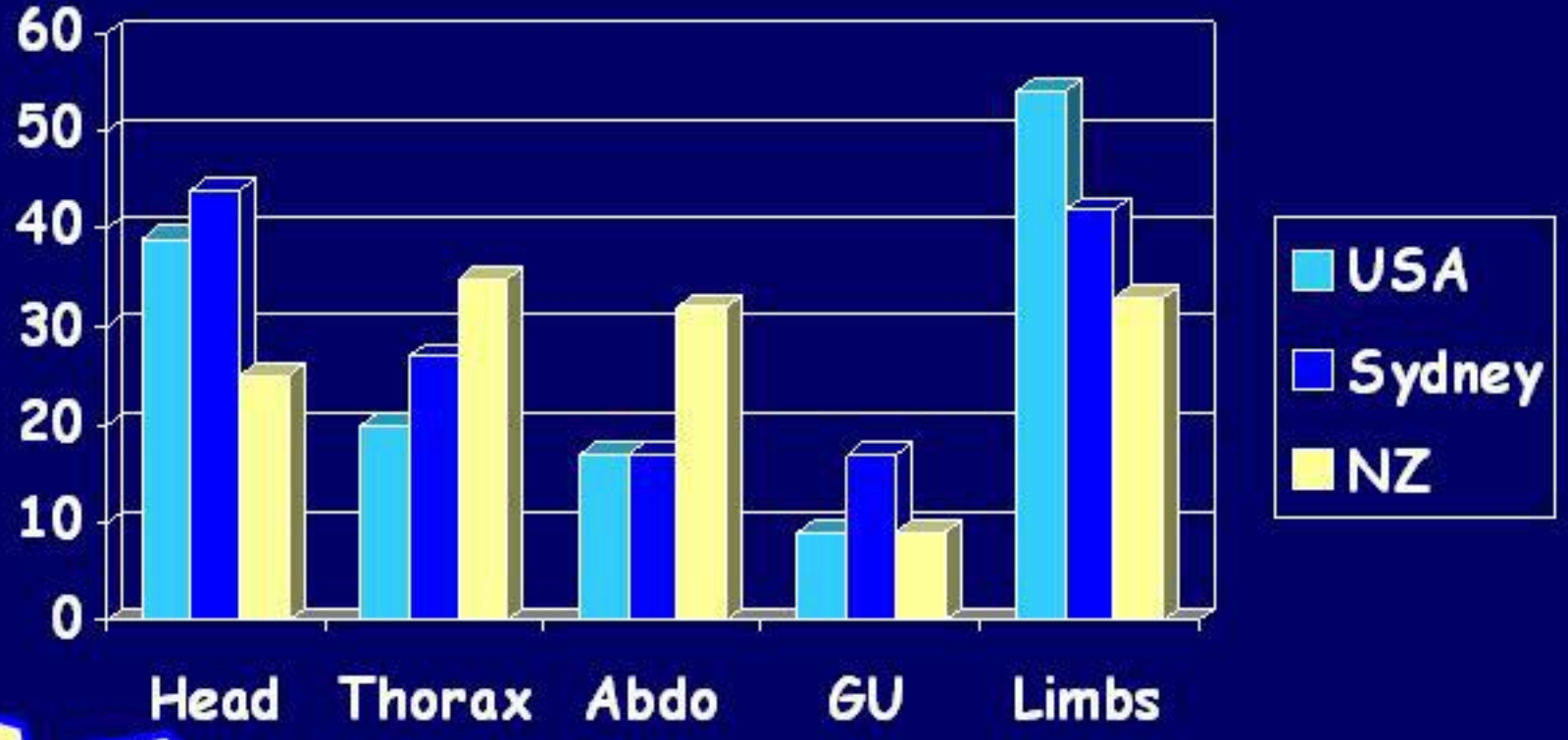
Fractures vs Associated Injury



Predictors of associated injury

- Multiple fractures of the ring
  - Associated with higher abdo/GU injury
- Geometry of fracture
  - Predicts risk of haemorrhage

Associated Injuries



Mortality

- 6 patients (7%)
- 5 severe head injury
  - ped vs car
- 1 multiorgan failure
  - RTC passenger

Introduction

- 2.5 – 7.5% of blunt abdo trauma
- 9 year retrospective review
- 84 cases
- Mechanism, classification and associated injuries

Mortality

- Starship 7%
- Sydney 4%
- Philadelphia 3.6%

Management of Pelvic

- 92% conservatively managed
  - 94% Sydney, 97% Philadelphia
- 7 patients had interventions
  - 3 ex fix
  - 3 acetabular # (ORIF)
  - 1 MUA + hip wash

Adult vs Child

- Adult > Child ~2:1
- Mechanism
- Role of fracture vs associated injury
- Mortality rate and cause

Pennsylvania Trauma Outcome Study*

- Early functional outcomes
- FIM score (functional independent measurement)
  - Feeding
  - Transfer mobility
  - Locomotion
  - Expression
  - Social interaction

*Upperman, J Ped Surg 2000: 35 (6): 1002-5

Functional Outcome Study conclusions

- Short term function significantly impaired in a high percentage of children
- More FIM studies for long term morbidity required
- Aggressive rehabilitation program required

Conclusion

- ↑ fracture complexity = ↑ associated injury
- Children die from associated injuries
- Similar figures around the world
- Long term outcome

Thank you

Comparison Studies

- Chia 2004, Sydney
- Silber 2001, Philadelphia
- Lane-O'Kelly 1995, Ireland
- Reiger 1997, Germany

Comparison of numbers

	Starship	Sydney	Philadelphia
n / yr	9	7	18
Mean Age	9	9	9
Age Range	1-14	1-16	1-18
Boys	67%	66%	57%

Ped vs Car


COME
POST OFFICE
pharmacy
Based on a family saloon in normal driving conditions

Wear a seat belt!

Mechanism

- Ride-on lawnmower
- Fell off mini-train
- Boogyboarding on sand-dunes
- Non-accidental injury

"Other Injuries"

Mechanism Child vs Adult