Pelvic Angiography for Trauma in Children: a Rare but Useful Adjunct

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We have no conflicts of interest to disclose.
Background

- External Compression
- Angiography
- Pelvic packing
- Direct vessel ligation

Rare but real threat of pelvic fractures
Background

- EAST Guidelines 2011
- 85-100% success rates
Methods

- Retrospective review
- Level 1 Trauma
- 2004-2014
Results

Total patients with pelvic fractures
n=249

Transferred to adult facility
n=2

Discharged home n=31

Included patients with pelvic fractures
n=216
Mechanism of Injury

- Motor vehicle collision
- Fall
- All terrain vehicle
- Automobile vs pedestrian
- Animal
- Other (abuse, gun shot, sports injury, TV)
Distribution of Pelvic Fractures

- Superior rami
- Inferior rami
- Iliac wing
- Sacrum
- Acetabulum
- Ischium
- Open book
• 28 patients (13%) had operative treatment of pelvic fractures
  • External fixation
  • Open reduction internal fixation
  • Spica

• No preperitoneal packing
Four patients (1.9%) underwent angiography. All four had clinical evidence of hemorrhage. One had contrast extravasation on imaging.

Angiography

- Extravasation
  - Gelfoam
  - Coiling
  - No further intervention

- No extravasation

*No incidence of pseudoaneurysm, femoral artery thrombosis or end organ necrosis.*
Contrast extravasation on CT scan?

- Three patients
- Stabilized in the ICU
- 2/3 concurrent injuries
- 2/3 blood transfusion but responded
- 2/3 OR the following day for pelvic repair
Conclusion

- Angiography appears to be a safe therapy in children.

- Reserve for those with ongoing blood loss.

- Despite extravasation, consider stability of the patient first, as angiography may not be necessary.
Future Direction

• Need for a standard treatment algorithm for severe pelvic fractures

• Consider a protocol based on the management of pediatric liver and splenic trauma.