



EM CASES SUMMARY

Prepared by Dr. Keerat Grewal, Oct 2014

Episode 52 – Commonly Missed Uncommon Orthopedic Injuries

Drs. Ivy Cheng & Hossein Medhian

Pelvic Apophyseal Avulsion Fractures

Q: What are apophyseal avulsion fractures?

Epiphyseal plates and apophyses are the weakest part of the MSK chain. Because ligaments and tendons are stronger than these bony growth areas in children and young adults, avulsion fractures of these areas can occur in patients under the age of 25. The mechanism of injury is typically a sudden or forceful eccentric muscle contraction during running, jumping or kicking, and so these are usually sports-related injuries.

Q: What are the common sites affected by pelvic apophyseal avulsion fractures?

The ischial tuberosity is the most common site of a pelvic apophyseal avulsion fracture that results from a sudden contraction of the hamstring muscle.

Other Pelvic Apophyseal Injuries include:

- iliac crest avulsion
- anterior superior iliac spine (ASIS) avulsion
- anterior inferior iliac spine (AIIS) avulsion
- greater trochanter avulsion
- lesser trochanter avulsion

Q: Why is it important of ED practitioners to know about pelvic apophyseal avulsion fractures?

These avulsion fractures take longer to heal compared to a simple strain (can take up to 6–8 weeks). Commonly, management is initiated with non-weight bearing ambulation with crutches, then weaning as tolerated.



Fig 9: Avulsion fracture

Key References

1. Anderson, RB, Hunt, KJ, & McCormick, JJ. Management of common sports-related injuries about the foot and ankle. 2010. J Am Acad Orthop Surg, 18(9): 546-56. Abstract available at: <http://www.ncbi.nlm.nih.gov/pubmed/20810936>
2. Caswell, F & Brown C. Identifying foot fractures and dislocations. 2014. Emerg Nurse, 22(6): 30-4. Abstract available at: <http://www.ncbi.nlm.nih.gov/pubmed/25270819>
3. Stanbury, SJ & Elfar, JC. Perilunate dislocation and perilunate fracture-dislocation. 2011. J Am Acad Orthop Surg, 19(9): 554-562. Abstract available at: <http://www.jaaos.org/content/19/9/554.abstract>
4. Boyd, KT, Peirce, NS, & Batt, ME. Common hip injuries in sport. 1997. Sports Med, 24(4): 273-88. Abstract available at: <http://www.ncbi.nlm.nih.gov/pubmed/9339495>
5. Moeller, JL. Pelvic and hip apophyseal avulsion injuries in young athletes. 2003. Curr Sports Med Rep, 2(2): 110-5. Abstract available at: <http://www.ncbi.nlm.nih.gov/pubmed/12831668>