



In each issue, *JUCM* will challenge your diagnostic acumen with a glimpse of x-rays, electrocardiograms, and photographs of conditions that real urgent care patients have presented with.

If you would like to submit a case for consideration, please email the relevant materials and presenting information to editor@jucm.com.

Elbow Pain and Swelling After a Fall



Case

A 28-year-old woman presents to urgent care with elbow pain and swelling following a mechanical fall. She reports the pain is worse with range of motion. There is no shoulder or wrist pain, and no paresthesias.

Exam confirms pain with palpation and decreased range of motion. The radial pulse is 2+; sensation distal to the elbow is grossly intact. The patient is afebrile, has a pulse of 104, respirations 20, and BP 124/80.

View the image taken (**Figure 1**) and consider what your diagnosis and next steps would be. Resolution of the case is described on the next page.

THE RESOLUTION

**Differential Diagnosis**

- Fat pad sign
- Osteolytic lesion
- Radial head fracture
- Elbow dislocation
- Nightstick fracture

Diagnosis

The x-ray reveals a fat pad sign, or elevated posterior fat pad, with positive elbow joint effusion. The lateral view of the elbow shows a focal area of lucency in the posterior aspect of the elbow at the level of the olecranon fossa, closely apposed to the bone.

Learnings

- Normal fat in the olecranon fossa is not visible unless up-lifted by joint effusion.
- Elbow fractures may not be evident on an x-ray, but secondary signs, such as a fat pad elevated by bleeding, may indicate that there is a fracture.
- An anterior fat pad is often normal, but if elevated it is abnormal.
- A posterior fat pad seen on a lateral x-ray of the elbow is always abnormal. If a posterior fat pad is identified without a visible fracture, then an occult fracture should be suspected and will be present up to 75% of the time.
- In adults, an occult fracture is usually found to be a radial head fracture, whereas in children it is typically a supra-condylar fracture.

Pearls for Initial Management and Considerations for Transfer

- When performing an x-ray of the elbow, look for a dislocation, bony lesion, fracture, or abnormal fat pad.
- If a fracture is not seen, but an abnormal fat pad is seen, treat the patient “as if” a fracture were seen, with immobilization and orthopedic referral.
- Indications for emergent transfer may include intractable pain, uncertainty of diagnosis, possibility of compartment syndrome, consideration of septic arthritis or necrotizing soft tissue infection (NSTI), potential for dislocation, or a Salter-Harris fracture. ■

Acknowledgment: Image courtesy of Teleradiology Specialists.