

EM CASE OF THE WEEK.

BROWARD HEALTH MEDICAL CENTER
DEPARTMENT OF EMERGENCY MEDICINE



Care Warriors

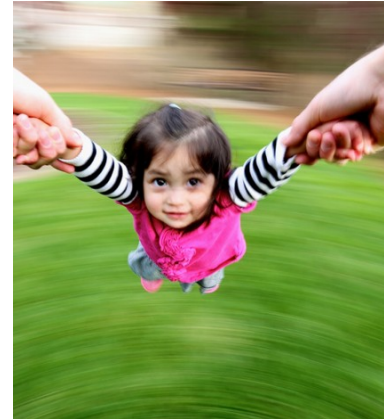
Author: Dominique Lambert, PA-S2 | Editors: Andrea Sarchi, DO ; Jason Mansour, MD

October 2016 | Vol 3 | Issue 5

Nursemaid's Elbow

A 2-year-old girl is brought to the emergency department by her mother after she sustained an injury to the left wrist while playing with her siblings. The mother states that her other daughter was picking the patient up off the floor by her arms when she suddenly cried out. Since that time, she has refused to use her left arm. The patient is in no distress unless an attempt is made to examine her left arm. On physical examination, the left wrist is held in a flexed and pronated position. Which of the following is the most appropriate next step?

- A. Sling immobilization of the left arm and follow-up in five days
- B. Skeletal survey
- C. Reduction of the subluxed radial head
- D. X-ray studies of both upper extremities
- E. X-ray studies of the left wrist, including scaphoid views



Haltzman, Jenny. *What You Need To Know About Swinging A Child By Their Arms*. 2016.

Nursemaid's elbow, defined as a radial head subluxation, is a common elbow injury that is unique to young children.

Radial head subluxation has a peak incidence from two to three years of age. It typically results from a quick pull on the child's arm.

The left arm is more commonly involved and generally girls are affected more often than boys.

EM Case of the Week is a weekly "pop quiz" for ED staff.

The goal is to educate all ED personnel by sharing common pearls and pitfalls involving the care of ED patients. We intend on providing better patient care through better education for our nurses and staff.

BROWARD HEALTH MEDICAL CENTER

Department of Emergency Medicine
1625 SE 3rd Avenue
Fort Lauderdale, FL 33316

The correct answer is C. When the history and physical examination findings represent the classic presentation of subluxation of the radial head, reduction is the most appropriate next step.

Pathogenesis

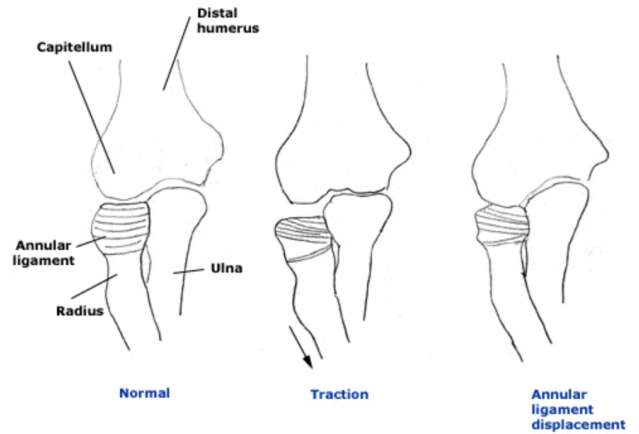
The usual mechanism of injury for a radial head subluxation is axial traction on a pronated forearm with the elbow in extension. With sudden traction on the distal radius, a portion of the annular ligament slips over the head of the radius and slides into the radiocapitellar joint, where it becomes trapped. The symptoms that develop are the result of displacement of the annular ligament. By the age of five years, the annular ligament has become thick and strong and is unlikely to tear or be displaced.

Clinical Features

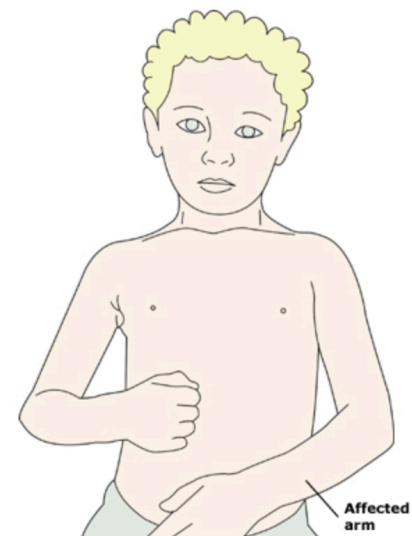
The usual presenting complaint is that the child refuses to use the affected arm. The history reveals that the forearm was pulled while it was pronated and the elbow was extended. This often occurs as a parent or caregiver grabs the arm to prevent the child from falling or pulling away. Nursemaid's elbow also can occur when a child is swung by the forearms or during play.

The child presents in little distress unless attempts are made to move the elbow. The child may hold the affected arm close to the body with the elbow flexed, adducted and pronated. There may be mild tenderness over the anterolateral aspect of the radial head. However, the distal humerus and ulna are typically nontender and not swollen. Passive range of motion of the elbow, if the child allows it, is normal. Pain with even mild supination of the forearm is almost always present.

The diagnosis of Nursemaid's elbow is made clinically and radiographs are usually not necessary.



A



B

Moore, BR. Radial head subluxation (nursemaid's elbow). In: UpToDate, Post TW (Ed), UpToDate, Waltham, MA.

Image A represents the annular ligament displacement when there is sudden traction on the distal radius.

Image B represents the classic arm position in children with nursemaid's elbow

For a list of educational lectures, grand rounds, workshops, and didactics please visit BrowardER.com and click on the **"Conference"** link.

All are welcome to attend!

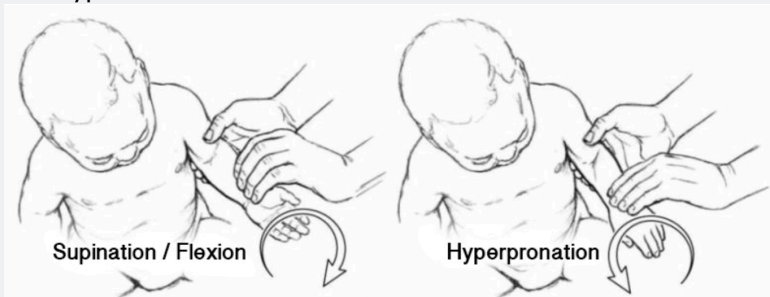
Management

Reduction of Nursemaid's elbow can usually be performed in the emergency department. Anesthesia and sedation are not required. Reduction may be attempted for the child with typical physical findings, even when the classic history is lacking. Supination and hyperpronation are two techniques used for reduction.

In the hyperpronation method, the examiner supports the child's arm at the elbow and places moderate pressure with a finger on the radial head. The examiner grips the child's distal forearm with the other hand and hyperpronates the forearm. A click may be felt by the finger over the radial head when the displacement is reduced.

In the supination/flexion method, the examiner supports the child's arm at the elbow and exerts moderate pressure on the radial head with one finger. With the other hand, the examiner holds the child's distal forearm, and then pulls with gentle traction. While maintaining traction, the examiner fully supinates the child's forearm and then fully flexes the elbow in one smooth motion. A click may be felt by the finger over the radial head, or a pop may be heard by the examiner when the displacement is reduced.

Following successful reduction, there is immediate pain relief. Reduction can be confirmed when the child moves the affected arm. This typically occurs within 5 to 10 minutes. Nursemaid's elbow may recur when the child sustains another injury with the typical mechanism.



Kilgore, Kevin. *Nursemaid's Elbow (Radial Head Subluxation)*. 2016.

Take Home Points

- Nursemaid's elbow is the most common elbow injury in young children. It occurs when a portion of the annular ligament slips into the radiocapitellar joint and becomes trapped.
- Nursemaid's elbow should be suspected in young children who hold the arm pronated and either partially flexed or extended at the elbow and have no other physical findings.
- Radiographs are unnecessary unless the history and/or examination are inconsistent with a diagnosis of Nursemaid's elbow or when reduction attempts are unsuccessful.
- Reduction of a Nursemaid's elbow is done using the hyperpronation or supination maneuver.



ABOUT THE AUTHOR

This month's case was written by Dominique Lambert. Dominique is a Physician Assistant student from Nova Southeastern University. She did her emergency medicine rotation at BHMC in September 2016. Born and raised in South Florida, Dominique intends on staying close by after graduation.

REFERENCES

Halteman, Jenny. What You Need To Know About Swinging A Child By Their Arms. 2016. Web. 21 Sept. 2016.

Kilgore, Kevin. *Nursemaid's Elbow (Radial Head Subluxation)*. 2016. Web. 21 Sept. 2016.

Marcdante KJ, Nelson WE. *Nelson Essentials of Pediatrics*. Philadelphia, PA: Saunders/Elsevier; 2011.

Moore, BR. Radial head subluxation (nursemaid's elbow). In: UpToDate, Post TW (Ed), UpToDate, Waltham, MA.