

A 1-year-old girl is brought to the emergency department because she is not moving her right arm. Her father says that the girl acted normally when she awoke this morning. He was swinging her by the forearms when she suddenly started crying and refused to use her right arm. He has swung her by the arms previously and it usually makes her laugh. The girl lives with her father and her mother, who is currently out of town. Physical examination shows a well-nourished child who holds her right arm in pronation against the chest. She avoids any movement of her right arm. No bruises or other abnormalities are seen. Which of the following is the most appropriate next step in management of this patient?

- ☐ A. Contact the child protection agency
- ☐ B. Closed reduction and casting of the right arm
- ☐ C. Gently hyperpronate the right forearm
- ☐ D. Order a complete skeletal survey
- ☐ E. Order an x-ray of the right arm
- ☐ F. Refer the child to an orthopedic surgeon



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- ☐ A. Contact the child protection agency [1%]
- ☐ B. Closed reduction and casting of the right arm [6%]
- ☒ C. Gently hyperpronate the right forearm [72%]
- ☐ D. Order a complete skeletal survey [2%]
- ☐ E. Order an x-ray of the right arm [19%]
- ☐ F. Refer the child to an orthopedic surgeon [1%]

[Proceed to Next Item](#)

Explanation:

User Id:

Radial head subluxation (nursemaid's elbow)	
Mechanism	<ul style="list-style-type: none"><li>• Axial traction on forearm with elbow extended (child pulled, lifted, or swung by arm)</li></ul>
Physical examination findings	<ul style="list-style-type: none"><li>• Arm held <b>extended &amp; pronated</b></li><li>• No swelling, deformity, or focal tenderness</li></ul>
Treatment	<ul style="list-style-type: none"><li>• Supination of forearm &amp; flexion of elbow OR</li><li>• <b>Hyperpronation</b> of forearm</li></ul>

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Radial head subluxation (nursemaid's elbow) is a **common** injury in **preschool children**. The injury characteristically occurs from **innocent swinging** of a young child by the arms or **pulling** a child's arm while in a hurry. The child is usually not in distress at presentation but may cry at any attempt to move the elbow or forearm. The preferred treatment of this condition is closed reduction by applying pressure on the radial head and **hyperpronating the forearm**. **Forearm supination with elbow flexion** is also commonly performed but may be less successful and more painful. No post-reduction films are needed when the patient resumes full use of the extremity. A pop may also be heard on successful reduction.

**(Choices A and D)** The likelihood of child abuse is very low as the mechanism of injury is consistent with the patient's examination. If the historian is inconsistent with the details or the examination is incongruent with the reported mechanism, a complete skeletal survey should be performed to look for healing fractures in other parts of the body.

**(Choices B and F)** Immobilization with slings or casts is not needed, and the patient should experience immediate return of normal function after manual reduction. Reduction is typically performed by primary care or emergency physicians.

**(Choice E)** The diagnosis is made clinically as radiographs are often normal.

#### Educational objective:

Subluxation of the radial head is common in preschool children. The classic mechanism is swinging or pulling a child by the arm. Full recovery after closed reduction by forearm hyperpronation confirms the diagnosis.

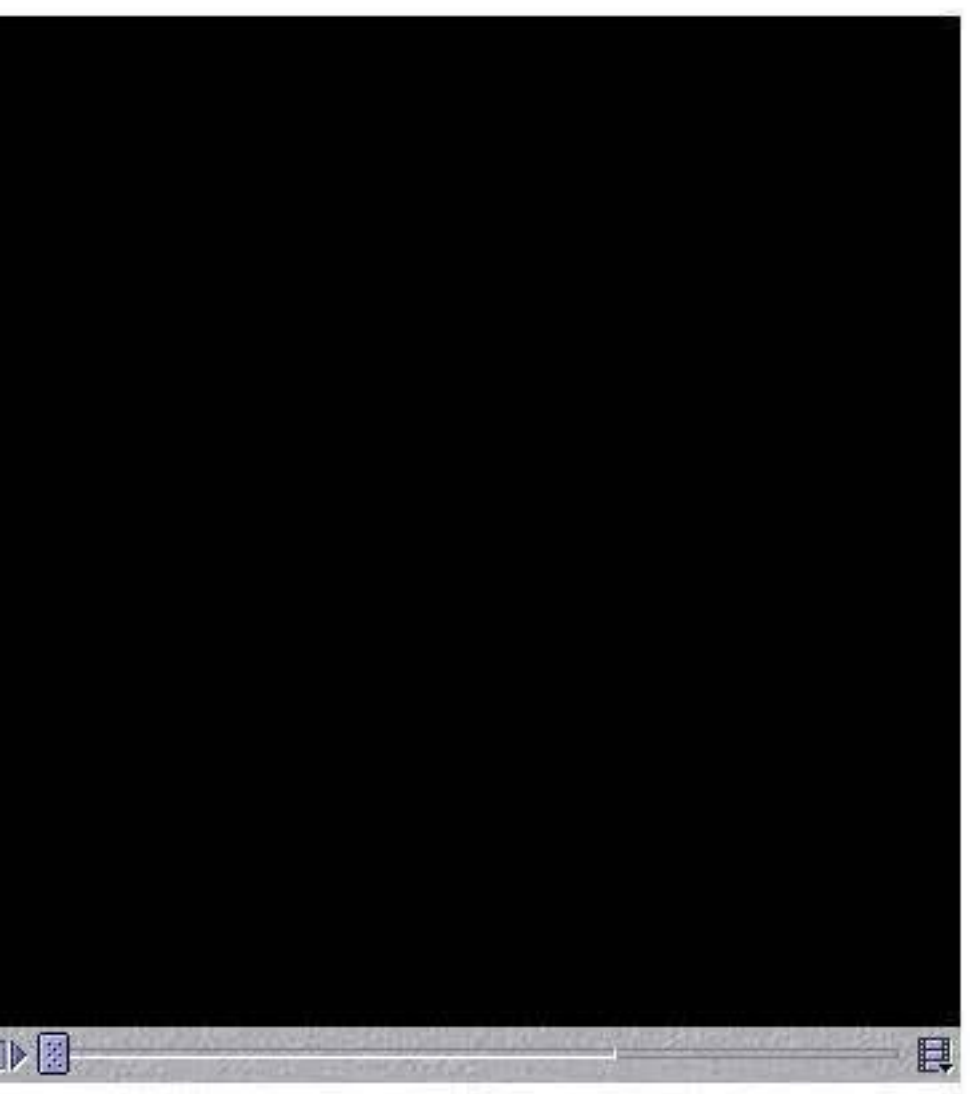
#### References:

1. **Randomized comparison of pain perception during radial head subluxation reduction using supination-flexion or forced pronation.**
2. **Manipulative interventions for reducing pulled elbow in young children.**



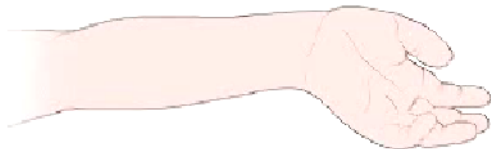
Media Exhibit

aid's elbow reduction maneuvers



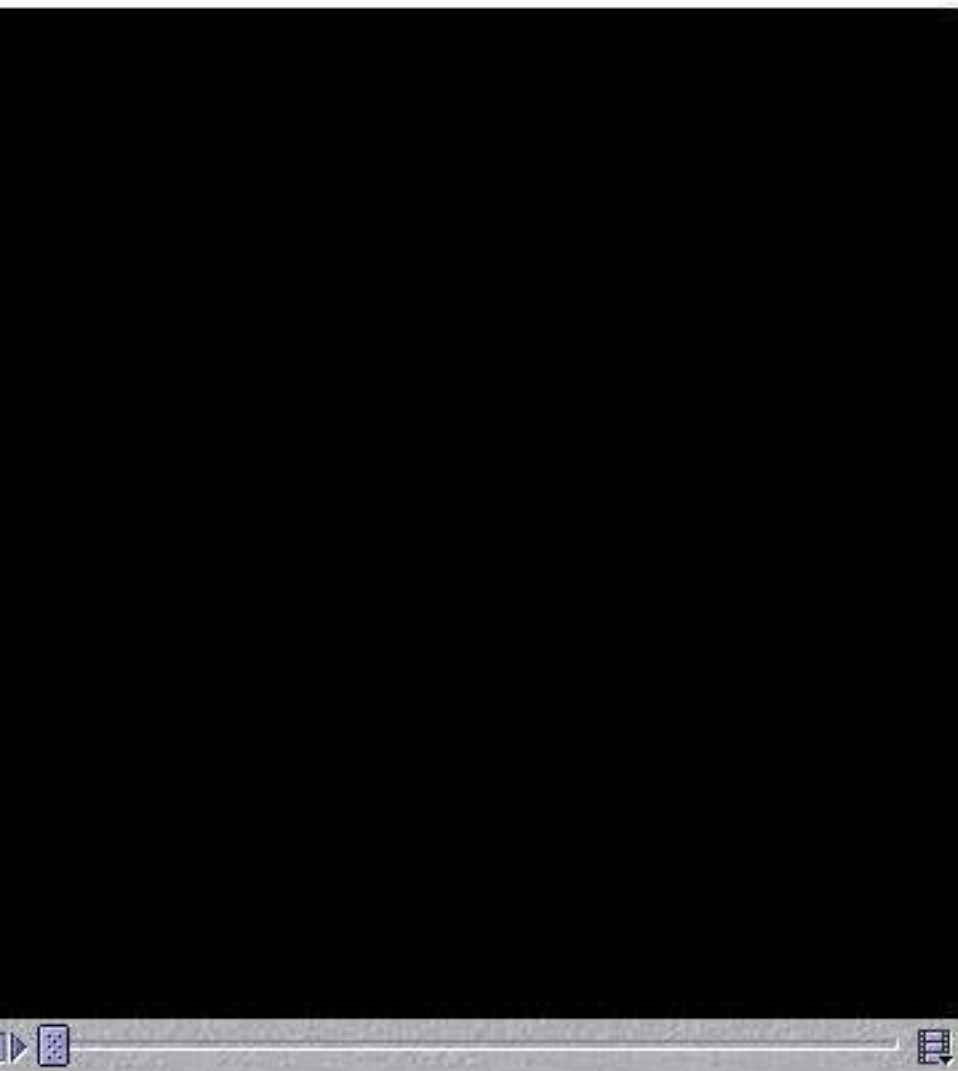
# Nursemaid's elbow

reduction maneuver



Media Exhibit

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