4-3 Fracture/Suspected Child Abuse

PEDIATRICS

STANDARD FORMS

These templates are included in the Appendix; copy before each use.

LEARNING OUTCOMES

Cognitive

The student will be able to:

1. Describe signs and symptoms of a femur fracture.
2. Correlate signs and symptoms of a femur fracture to the pathophysiology of neurovascular compromise.
3. Identify factors in a patient's history that increase risk for child abuse.
4. Identify factors in a patient's current condition that increase risk for neurovascular compromise.
5. Identify the appropriate interventions for the patient with a femur fracture.
6. Identify the appropriate diagnostic evaluation for the patient with an orthopedic injury and suspected child abuse.
7. Differentiate the roles of team members in response to a patient with an orthopedic injury and suspected child abuse.

Psychomotor

The student will be able to:

1. Perform appropriate assessment for a patient with a femur fracture in the setting of suspected child abuse.
2. Initiate appropriate interventions for a patient with a femur fracture:
   - Immobilization.
   - Pain management.
   - Head-to-toe assessment to rule out other traumatic injuries.
   - Maintain patient safety.
   - Facilitate additional diagnostic workup for suspected child abuse.
   - Contact appropriate Child Protective Services (CPS) for region of practice.
   - Objectively document findings.
3. Work collaboratively as part of the healthcare team in the care of a patient with a femur fracture in the setting of suspected child abuse.

Affective

The student will be able to:

1. Reflect upon performance in the care of a patient with a femur fracture in the setting of suspected child abuse.
2. Identify personal feelings in delivering care to a patient with a femur fracture in the setting of suspected child abuse.
3. Discuss feelings related to working as a member of a team in the care of a patient with a femur fracture in the setting of suspected child abuse.
4. Identify factors that worked well during the simulation of care of a patient with a femur fracture in the setting of suspected child abuse.
5. Identify factors that needed improvement during the simulation of care of a patient with femur fracture in the setting of suspected child abuse.
6. Develop self-confidence in the care of a patient with a femur fracture in the setting of suspected child abuse.

Communication

The student will be able to:

1. Communicate effectively with healthcare team members in care of a patient with a femur fracture in the setting of suspected child abuse.
2. Communicate effectively with the patient and family in the care of a patient with a femur fracture in the setting of suspected child abuse.
3. Use SBAR format when communicating with team members about the care of a patient with a femur fracture in the setting of suspected child abuse.
4. Objectively document findings on assessment of a patient with a femur fracture in the setting of suspected child abuse.
5. Practice transparent thinking (thinking out loud) to facilitate group problem solving.
6. Use directed communication (directing a message to specific individual) when delegating tasks.
7. Employ Closed-Loop Communication (acknowledgment of receipt of the message and status) to acknowledge communications from others.

Safety

The student will be able to:

Administer and maintain specific protecting interventions with attention to safety of the client and healthcare professional.

1. Demonstrate a safe environment with attention to hazards to healthcare providers, visitors, and the client. Includes body mechanics, tripping hazards, and equipment issues.
2. Demonstrate attention to national patient safety goals. Includes patient identification standards, effective

communication among healthcare providers, and safe medication administration.
3. Demonstrate attention to standard precautions. Includes hand washing, infection control measures, and use of personal protective equipment (PPE) as needed.

Leadership and Management/Delegation

The student will be able to:
1. Identify tasks that can be legally, ethically, and safely delegated to unlicensed assistive personnel (UAP) or licensed practical nurse (LPN) in the care of a patient with a femur fracture in the setting of suspected child abuse.
2. Identify and prioritize patient's needs in care of a femur fracture in the setting of suspected child abuse.

Patient Care Outcomes

The student will recognize the importance of these patient care outcomes:
1. Safe disposition of child post-discharge.
2. Accurate reporting of suspected child abuse to local child protective agency and police.
3. Developmental considerations of child who is potentially being abused.

OVERVIEW OF THE PROBLEM

Two problems discussed: Child maltreatment and extremity fractures.

Child Maltreatment

Definition

Child abuse can be physical, psychological, sexual, or neglect. For information from the CDC regarding this topic, see the following link:
- CDC Child Maltreatment Surveillance at http://www.cdc.gov/ncipc/dvp/CMP/CMP-Surveillance.htm

Documentation and Reporting of Suspected Child Maltreatment

Documentation of suspected child maltreatment must be thorough and objective. Careful documentation of the reported history and physical findings can have important legal implications. Go to the following site for a tool to use for documentation on page 18 of its guideline.
- http://www.luhs.org/depts/emsc/Child%20Abuse.Neglect% 20Guideline.doc

Mandated reporters are required by law to report suspected cases of child maltreatment to child protective agencies. State statutes define mandated reporters as well as the conditions for reporting. In most states, mandated reporters include but are not limited to physicians, nurses, prehospital providers, social workers, teachers, psychiatrists, childcare providers, and law enforcement. It is important to be knowledgeable of the child abuse laws within one's state of practice. It is not the mandated reporter's responsibility to prove the abuse, but rather to report suspicion of abuse.

Pathophysiology

- Characteristics: Victims are powerless, may blame themselves. Abusers often blame the victim, have poor impulse control, use power to threaten the victim.

Risk Factors

Abuse can be a learned response, previous history of abuse within the family.
Any child can become a victim.

Assessment

Subjective

History
- Delay in seeking medical care
- Major discrepancies in the history between different person's versions
- History and observed injuries
- History and the child's developmental capabilities
- History of multiple visits for a variety of injuries

Objective

Physical Exam
- Withdrawn, apathetic, does not cry
- Does not turn to caregivers for comfort
- Unusual fear or desire to please caregiver
- Poor hygiene, malnourished
- Presence of suspicious evidence of physical injury:
  - Multiple bruises
  - Welts
  - Abrasions, especially central injuries (buttocks, trunk)
  - Bite marks
  - Burn marks
  - Rope marks
  - Handprints
  - Fingernail marks
  - Old bruises or fractures in various stages of healing (especially in child less than 3 years)
- Caregiver behavior: exaggerated concern

Some cultural and religious health practices can be misdiagnosed as child maltreatment if healthcare providers do not remain cognizant of the family's ethnicity and cultural beliefs regarding healthcare; for example:
- Cupping: Asia, Europe, Russia, Middle East. Heated cup containing steam applied to specific points on the body. As steam cools, a vacuum is created producing circular, ecchymotic areas on the skin.
- Coining: Vietnam. Coin repeatedly rubbed lengthwise on oiled skin, which may produce lesions resembling welts.
- Burning: Southeast Asia. Small areas of skin are burned to treat various ailments.

- Moxibustion: Southeast Asia. Stick of burning wormwood, incense, or yarn is placed over an affected area of the body. May produce lesions resembling cigarette burns, usually in a pyramid pattern.
- Topical garlic: Yemenite Jews. Crushed garlic is applied to wrists, which can result in blisters or garlic burns.
- Remedies containing lead: Mexico, Southeast Asia, India.

Certain medical conditions in addition to normal skin pigmentation variations in some ethnic groups can be misdiagnosed as child maltreatment; for example:

- Mongolian spots frequently confused with bruising
- Erythema multiforme
- Idiopathic thrombocytopenic purpura
- Leukemia
- Hemophilia
- Osteogenesis imperfecta

Nursing Management

Interventions

- Provide safe environment
- Conduct interview in private; separate child and caregiver if indicated
- Treat physical injuries
- Document physical injuries
- Maintain supportive nonjudgmental approach
- Mandatory reporting
- Encourage individual and family therapy

Evaluation/Outcome Criteria

- Physical injuries have been treated
- Plan established for safety and protection against further injury
- Abuser has agreed to seek help

Extremity Fractures

Definition

Two types of extremity fractures:

- Closed: Bone fragments remain under skin surface
- Open: Bone fragments have broken through skin surface increasing infection risk

Assessment

Subjective

- Tingling
- Numbness
- Nausea
- Pain/tenderness
- History of trauma
- Muscle spasm

Objective

- Change in function
- Deformities
- Ecchymosis
- Localized edema
- Crepitation

Diagnostic Tests

- X-ray

Treatment

- Immobilization
- Cast includes joints above and below fracture

Nursing Management

Goal: Promote healing and prevent complications.

Interventions

- Appropriate diet and fluid to promote healing and prevent constipation and kidney stones
- Developmentally appropriate activities to reduce perceptual deprivation

Goal: Prevent further injury or trauma

Interventions

- Maintain proper alignment
- Maintain skin integrity
- Assess neurovascular function—the five Ps (pain, paralysis, paresthesia, pulses, pallor), temperature changes, maintain mobility, cast care

Goal: Provide care related to use of assistive devices

- Teach proper use of crutches

Goal: Provide safety measures

- Monitor for signs of complications such as thrombophlebitis, fat embolism, nerve compression, avascular necrosis, infection, delayed union/nonunion, skin breakdown, duodenal distress (with spica cast)

Goal: Health teaching

- Explain purpose of cast
- Signs and symptoms of complications
- Isometric exercises
- Safe use of crutches

Evaluation/Outcome Criteria

- No further injury or complications related to immobilization
- Bone remains in alignment and begins to heal
- Elevates limb to relieve edema
- Understands prevention of potential complications
- Begins to use affected limb
- Demonstrates correct technique for ambulation

REVIEW QUESTIONS

1. Mandated reporters are state defined and legally required to report suspected cases of child maltreatment
   a) True
   b) False
   Answer:

2. List four categories of child mistreatment
   Answer:

3. Some medical conditions can be mistaken for child maltreatment. List three:
Answer:

4. You are caring for a child with an arm fracture that has been recently casted. Upon routine assessment you notice that his fingers are swollen, capillary refill is sluggish, and he is stating that his arm feels "funny." What should your first action be?
Answer:

5. List the five Ps used to evaluate neurovascular status in a patient with an extremity fracture:
Answer:

Related Evidence-Based Practice Guidelines

Cincinnati Children's Hospital Medical Center. (2006, December). Evidence-based care guideline for femoral shaft fractures. Cincinnati: Author. Guidelines. Retrieved from http://www.guideline.gov

The Joint Commission National Patient Safety Goals Hospital Program. Retrieved from http://www.jointcommission.org/generalpublic/npsg/10_npsgs.htm

Kellogg, N. D. (2007). American Academy of Pediatrics Committee on Child Abuse and Neglect. Evaluation of suspected child physical abuse. Pediatrics, 119(6), 1232–1241.

SBAR technique for communication: A situational briefing model. The Institute for Healthcare Improvement. Retrieved December 19, 2008, from http://www.ihi.org/IHI/Topics/PatientSafety/SafetyGeneral/Tools/SBARTechniqueforCommunicationASituationalBriefingModel.htm

Topics to Review Prior to the Simulation

- Neurovascular assessment in an extremity fracture
- Identification, documentation, and reporting of suspected child abuse

SIMULATION

Client Background

Biographical Data

- Age: 3
- Gender: female
- Height: 96 cm
- Weight: 15 kg

Cultural Considerations

- Language: English/Spanish
- Ethnicity: Hispanic
- Nationality: American
- Culture: Potential language barrier

Demographic

- Marital status: N/A
- Educational level: N/A
- Religion: Catholic
- Occupation: N/A

Current Health Status

- Femur fracture

History

- Psychosocial history
  - Social support: parents: father present, mother at home with two younger siblings
- Past health history
  - Medical: none, up-to-date (UTD) on immunizations
  - Surgical: none
- Family history: none

Admission Sheet

Name:	Jessica Ramirez
Age:	3
Gender:	Female
Marital Status:	N/A
Educational Level:	N/A
Religion:	Catholic
Ethnicity:	Hispanic
Nationality:	American

Admission Sheet—cont'd

Language: English/Spanish

Occupation: N/A

Hospital Provider's Orders

Patient's Name: Jessica Ramirez

Allergies: NKA

Diagnosis: Right femur fracture

Date	Time	Order	Signature
		Vital signs: q 4 hr	
		Neurovascular checks to RLE q 4 hr	
		Diet: NPO	
		Activity: Bed rest	
		IV therapy: NSS 50 mL/hr	
		Medications:	
		Morphine 1.5 mg IV q 4 hr prn severe pain (IV 0.1 mg/kg/dose)	
		Acetaminophen 225 mg po q 6 hr prn pain (po 15 mg/kg/dose)	
		Diazepam 3 mg IV q 2–4 hr prn muscle spasm right leg (IV 0.2 mg/kg/dose)	
		Diagnostic studies:	
		Right femur x-ray	
		Skeletal survey	
		CBC, BMP, PT/PTT	
		Treatments:	
		Splint to right leg, elevation	
		Orthopedics consult	
		Case management consult	
		Child life specialist	Dr. Daniels

Nursing Report

Jessica Ramirez, 3-year-old Hispanic female, carried into ED by father. The child is quiet and will not make eye contact with staff. Father initially states to triage nurse child tripped running and fell 2 days ago and now will not walk. When questioned later by physician, father states that child fell down stairs. Child appears clean, dressed appropriately for weather. Eyes downward, being held by father but does not seem affectionate toward him. When legs palpated while in father's arms, child winces on palpation of right femur. Will not bear weight on right leg. Swelling noted to right femur.

Student Simulation Prep Assignments

1. Identify items and their purpose in the care of a patient with a femur fracture.

Item	Purpose
IV with pump	
Orthopedic splinting supplies/pillows	

2. Identify team members and their specific roles in the care of a patient with a femur fracture in the setting of suspected child abuse.

Team Member	Role
Triage nurse	
ED nurse	
ED physician	
Admitting physician	
Case manager	
Child Protection Services (CPS)	

3. Relevant Data Exercise: Fill in columns below.

Relevant Data from Report	Relevant Data from Other Sources	Data Missing	Sources for Missing Data	Data Requiring Follow-up

4. Initial Focused Assessment

After reviewing the client background and nursing report, you are ready to assess your client's current status. Under each category, identify how you would target your assessment and what you would expect to find for the patient with a femur fracture in the setting of suspected child abuse.

History

Are there any questions you need to ask the patient or family to obtain additional relevant data?

Physical Exam

- General appearance:
- Integumentary:
- HEENT:
- Respiratory:
- CV:
- Breasts:
- Abdominal:
- Neuro:
- Musculoskeletal:
- Reproductive:
- Additional:
- Developmental

What are the nursing implications considering the developmental stage of your patient?

Answer:

5. Diagnostic Tests

What diagnostic test results relevant to the patient's current problem are needed to plan care?

Complete the table using Deglin et al, *Davis's Drug Guide for Nurses* 12e, or other drug reference.

Diagnostic Test	Significance to this Patient's Problem
CBC	
BMP	
PT/PTT	
Right femur x-ray	
Skeletal survey	

6. Treatment

Identify drugs that are used to treat a patient with a femur fracture.

Complete the table using Van Leeuwen et al, *Davis's Comprehensive Handbook of Laboratory and Diagnostic Testing with Nursing Implications* 4e, or other diagnostic test reference.

Medication	Dose, Route, Frequency	Indications	Side Effect	Nursing Implications
Morphine	1.5 mg IV q 4 hr prn severe pain (IV 0.1 mg/kg/dose)			
Acetaminophen	225 mg po q 6 hr prn pain (po 15 mg/kg/dose)			
Diazepam	3 mg IV q 2–4 hr prn muscle spasm right leg (IV 0.2 mg/kg/dose)			

7 Nursing Problems/Diagnoses

Identify three priority nursing problems/diagnoses.

Assessment Data	Priority Problem	Intervention	Expected Patient Outcome	Which Interventions Could Be Delegated to Unlicensed Personnel?
1.				
2.				
3.				

References

American College of Surgeons Committee on Trauma (2008). *Advanced trauma life: Support for doctors, Student course manual* (8th ed.). Chicago: ACS.

Deglin, J. H., & Vallerand, A. H. (2009). *Davis's drug guide for nurses* (11th ed.). Philadelphia: F. A. Davis.

Dillon, P. (2007). *Nursing health assessment: A critical thinking and case studies approach* (2nd ed.). Philadelphia: F. A. Davis.

Emergency Nurses Association (2004). *Emergency nursing pediatric course* (3rd ed.). Des Plaines, IL: ENA.

Erikson, E. H. (1950). *Childhood and society*. New York: Norton.

Van Leeuwen, A. M., Poelhuis-Leth, D. J., & Bladh, M. L. (2011). *Davis's comprehensive handbook of laboratory and diagnostic tests with nursing implications.* (4th ed.). Philadelphia: F. A. Davis.

Pdfs for Hip spica teaching Retrieved from
Cincinnati Childrens Hospital
http://www.cincinnatichildrens.org/health/info/orthopaedics/home/hip-spica.htm
Vanderbilt Childrens Hospital
www.vanderbiltchildrens.com/uploads/documents/ortho-hc0425.pdf
Seattle Childrens Hospital
www.seattlechildrens.org/child_health_safety/pdf/flyers/PE005.pdf
Phoenix Childrens Hospital
www.phoenixchildrens.com/emily-center/child-health-topics/handouts/Spica-Care-788.pdf

Neurovascular assessment. Retrieved from
http://www.snjourney.com/ClinicalInfo/Systems/PDF/NeuroVas%20Assessment.pdf

IV therapy. Retrieved from http://www.rch.org.au/clinicalguide/cpg.cfm?doc_id=5203