



Pediatric Clips

NURSING

Pediatric pain management

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Pediatric Nursing Clips from Pediatric Advanced Practice Nurses at Dayton Children's are quick reviews of common pediatric conditions.

The Children's Medical Center is the region's pediatric referral center for a 20-county area. As the only facility in the region with a full-time commitment to pediatrics, Children's offers a wide range of services in general pediatrics as well as in 35 subspecialty areas for infants, children and teens. We welcome your inquiries about services available — call 937-641-3666 or e-mail marketing@childrensdayton.org.

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CASE STUDY

Samantha, 4 months old, is receiving her second series of immunizations. Amanda, 12 months old, is admitted for bronchiolitis and receives an intravenous catheter. Elizabeth, 2 years old, is being

seen in the emergency department for otitis media. Nicholas, 5 years old, fell from his new bicycle and fractured his left humerus. Natalie, 11 years old, has sickle cell anemia and is in the hospital for a

crisis. Alexandria, 14 years old, is having a bone marrow aspirate as a part of her treatment for acute lymphocytic leukemia. Carson, 20 years old, is recovering from an appendectomy.

CASE DISCUSSION

These children and young adults are all examples of pediatric patients in varying types and severity of pain. Pain can be related to an illness or because of procedures used for diagnosis or treatment. It may exist without physiological cause. Pain is very puzzling; it can't be observed or measured with diagnostic testing. It is subjective and varies from individual to individual. So, then, how can we define pain?

DEFINITION AND HISTORY

Pain is defined as an unpleasant sensory and emotional experience associated with actual or potential tissue damage or described in terms of such damage (International Association for the Study of Pain, 1979).

Prior to the 1970's, medical and nursing literature did not discuss the management of pain in children at all. It was felt that children did not respond in the same way that adults did to pain, nor did children remember the pain they experienced.

In the 1970s, nurse researchers started to question basic premises about children and pain. A change regarding postoperative pain management started in the 1980s. Evidence based reviews appeared in literature and more research studies were conducted. A study by Anand (1990) demonstrated the

physiological harm that occurred when premature neonates had surgery with minimal anesthesia. This landmark study made a significant impact toward further pain research and changing attitudes regarding pain management in children of all ages.

PATHOPHYSIOLOGY

Pain is classified as nociceptive or neuropathic. Nociceptive pain is caused by an injury to, inflammation of or stimulation of peripheral pain receptors. This pain is usually associated with procedures or surgery and is managed with analgesics of various types. Neuropathic pain is caused by injury or degeneration of peripheral nerves or pain pathways in the central nervous system. Neuropathic pain is difficult to treat and often requires analgesics and medications that are not thought of as possessing analgesic properties. Examples of neuropathic pain include complex regional pain syndromes.

The pathway of pain is complex. In the simplest terms, a painful stimulus occurs, the sensation of pain is felt and the systemic "fight or flight" response is activated. Systemic stress hormones are released (epinephrine, norepinephrine, glucagons, cortisol, aldosterone, TSH and growth hormones). These hormones are responsible for many of the measurable symptoms of pain that

are observed as well as many of the negative side effects. Symptoms of pain include increased heart rate, respiratory rate, blood pressure, cardiac output, blood glucose and metabolic rate. Gastric, bowel and immune function may be impaired and breakdown of body tissues can occur.

PAIN MANAGEMENT PLANS

Assessment

The first and most important step to pain management is assessment. The assessment varies depending on the child's diagnosis, current setting, frequency of the child's visits and acute or chronic nature of the pain. A pain history should be obtained and include past painful experiences, usual pain behaviors and words that the child uses to express pain. It is important to identify what has worked in the past to relieve pain.

Current pain intensity is then assessed with the child's self-report. Intensity is best measured with a scale validated for use in children. Scales utilized at Dayton Children's include the Faces Pain Rating Scale and the zero to 5 Numeric Pain Intensity Scale. However, we know that many infants and developmentally delayed children cannot verbally express their pain. Caretaker report is an extremely valuable tool as is the use of the FLACC scale where

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behavioral observations are rated on a zero to 10 scale. A pain assessment also includes the location, duration and quality of pain.

Physiological measures such as heart/respiratory rate, blood pressure measurement and sweating may provide information about pain but can also be related to factors such as stress or anxiety. The child's developmental level is an essential component of pain assessment and provides direction regarding which assessment tools to utilize.

INTERVENTIONS

Child and parental support is a component of painful experiences. Encouraging parental presence is a critical area in which nurses can make a significant difference. Parental assessment is a key factor along with education or coaching of parents in how best to support their

child during the painful experience.

Analgesic administration has been well studied in pediatric patients and, when utilized appropriately, is very safe and effective in significantly reducing pediatric pain. Many different types of analgesics (nonsteroidal anti-inflammatory agents, opioid, sedatives and anesthetic agents) are available and are prescribed based on the severity and type of pain diagnosed. New formulations of many medications are available for topical and oral administration so that medications do not always have to be injected via needle.

Comfort measures is a very broad topic and are an important adjunct to pain therapy. Examples of these therapies include distraction, simple imagery, use of heat/cold, sucrose, nonnutritive sucking, massage therapy, physical touch, acupuncture and acupressure.

OUTCOMES OF PAIN MANAGEMENT

Whether your patient is in the primary care setting for a 15-minute visit or admitted to an inpatient setting for an acute presentation of pain, the child's pain and coping strategies must be evaluated so that the pain management plan can be adjusted. Evaluation of the child includes changes in the pain intensity, duration and frequency, the child's ability to cope with pain and the ability of the child to achieve a normal state of wellness.

An important patient outcome is for the child to be as pain free as possible. A multidisciplinary approach with a consistent pain plan is the optimal way to achieve that outcome in any setting.

FEATURED NURSE SPECIALIST



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Cincinnati and her Bachelor of Science degree in nursing from Wright State University. Asher is a member of the National Association of Neonatal Nurses, Society of Pediatric Nurses

and Association of Pediatric Surgical Nurses. She is a certified Pediatric Advanced Life Support Regional Faculty and is certified as an Advanced Burn Life Support Provider. Asher has worked at Dayton Children's since 1989.

PAIN MANAGEMENT AT DAYTON CHILDREN'S

For more information about pain management at Dayton Children's call Cindy Asher, RN, CNS at 937-641-8934

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