Chapter 29

The Child with a Genitourinary Condition

Objectives

Define each key term listed.

Name the functional unit of the kidney.

List four urological diagnostic procedures.

Recognize urinary tract anomalies in infants.

Differentiate between nephrosis and acute glomerulonephritis.

Discuss the skin care pertinent to the child with nephrosis.

Objectives (cont.)

Explain any alterations in diet applicable to the child with nephrosis.

Outline the nursing care of a child who is diagnosed as having Wilms’ tumor.

Discuss the impact of genitourinary surgery on the growth and development of children at various ages.

Discuss the impact of undescended testes on fertility.

Development of the Urinary Tract

Consists of two kidneys, two ureters, the urinary bladder, and urethra

Function is to rid body of waste products and maintain body fluid homeostasis

Produce a substance (ESF) that stimulates RBC formation in bone marrow and renin, which regulates blood pressure

Development of the Reproductive System

Gender is determined at time of fertilization
Tests to diagnose conditions of the reproductive tract

- Pap
- Blood tests
- Cultures
- Ultrasound
- Pregnancy

Sexual Abuse in Children

May be manifested by behaviors, such as

- Urinary frequency
- Excessive masturbation
- Encopresis
- Severe nightmare
- Bedwetting
- Irritation or pain in genital area
- Decrease in physical or emotional development

Assessment of Urinary Function

Urological diagnostic procedures

- UA
- Ultrasound
- IV pyelogram
- CT scan of kidneys
- Biopsy
Uroflow

Cystoscopy

Voiding cystourethrography

Cystometrogram

Urethral pressure

Terms Commonly Used to Describe Urinary Dysfunction

Dysuria

Frequency

Urgency

Nocturia

Enuresis

Polyuria

Oliguria

Anomalies of the Urinary Tract

Phimosis

A narrowing of the preputial opening of the foreskin

Prevents foreskin from being retracted over penis

Corrected by circumcision

Forcible retraction of tight foreskin is avoided because it can lead to paraphimosis

Foreskin cannot be returned to its normal position

Swelling and impaired circulation caused by constriction
• Epispadias and Hypospadias

• Epispadias

  ▪ Urinary meatus is on the upper surface of the penis

• Hypospadias

  ▪ Congenital defect in which the urinary meatus is located on the lower portion of the shaft
  ▪ May be accompanied by chordee, a downward curvature of the penis from a fibrous band of tissue

• In mild cases surgery is not indicated

• Surgery is usually performed before 18 months of age

• Routine circumcision is avoided in these children, because foreskin may be useful in the repair

• Epispadias and Hypospadias (cont.)

• Exstrophy of the Bladder

  ▪ Lower portion of abdominal wall and anterior wall of bladder are missing
  ▪ Noticeable by fetal sonogram
  ▪ Bladder lies open and exposed on abdomen
  ▪ Urine leaks continually from the bladder and skin becomes excoriated
  ▪ Bladder covered to protect mucosa
  ▪ Diapers placed under—rather than on the infant—to protect bladder while allowing urinary drainage
  ▪ Positioned on the back or side so urine drains freely
  ▪ Ideally, surgical closure performed within 48 hours of birth

• Obstructive Uropathy
• Calculi, tumors, strictures, and scarring may cause obstruction
• Hydronephrosis
• Polycystic kidney
• Urinary diversion surgery may be performed
  — Toddler may be unable to attain independence in toilet training
  — School-age child suffers from being different, may have a distorted body image
  — Adolescent may have lowered self-esteem and is concerned about sexuality
• Health Promotion
• The bladder capacity of a child can be approximated by the following formula
• Age in years + 2 = Ounces of bladder volume or capacity
• Acute Urinary Tract Infection (UTI)
• More common in girls
  — Girls have a shorter urethra, location of urethra is near anus, wearing of close-fitting nylon underwear, bubble baths, retention of urine, and vaginitis
• Most caused by *E. coli*
• Normal urine is acidic
  — Alkaline urine favors pathogens
• Terms
  — Urethritis
  — Cystitis
  — Bacteriuria
  — Pyelonephritis
  — Ureteritis
Vesicoureteral reflux

• Acute Urinary Tract Infection UTI (*cont.*)
• Signs and symptoms depend on the age of the child
• Treatment
  — Infants under 1 year old are usually hospitalized for IV antimicrobials
  — Older children are treated at home with oral antimicrobials
• Parent teaching stresses the need for proper amounts of fluid to maintain sterility and flushing of the bladder

• Health Promotion
• Interventions to prevent UTI
  — Cleanse perineum with each diaper change
  — Wipe perineum front to back
  — Avoid bubble baths
  — Have child urinate immediately after a bath
  — Use white cotton underwear
  — Use loose-fitting pants
  — Offer adequate fluid intake

• Nephrotic Syndrome (Nephrosis)
• A number of different types of kidney conditions distinguished by the presence of marked amounts of protein in the urine, edema, and hypoalbuminemia
  — More common in boys
  — Seen more in children 2 to 7 years of age
May be related to a thymus T-cell dysfunction

Prognosis is good in steroid-responsive patients

- Nephrotic Syndrome (Nephrosis) (cont.)
  - Generalized edema
  - Weight gain
  - Pale, irritable, listless
  - Poor appetite
  - Blood pressure usually normal
  - Urine exam reveals massive albumin and a few RBCs
  - Prone to infection when absolute granulocyte counts fall below 1000 cells/mm³ (neutropenia)

- Nephrotic Syndrome (Nephrosis) (cont.)

- Treatment
  - Steroids to reduce proteinuria and edema
    - Steroids mask infection; therefore, it is important to monitor the child for signs of infection
  - Prevent medication toxicity
  - Diuretics have not been effective in reducing nephrotic edema
  - Avoid adding salt to foods whenever edema is present
  - Fluids generally are not restricted except when massive edema is present

- Nephrotic Syndrome (Nephrosis) (cont.)

- Nursing care
  - Supportive care to parents and child
— Parent instructed to keep daily record of the child’s weight, urinary protein levels, and medications
— No vaccinations or immunizations should be administered while the disease is active or during immunosuppressive therapy
— Positioning
— Strict monitoring of I&O
— Daily weight and protection from infection

• Safety Alert

• A child recovering from nephrotic syndrome should not receive any vaccinations or immunizations while the disease is active and during immunosuppressive therapy.

• Acute Glomerulonephritis
• Allergic reaction (antigen-antibody) to group A beta-hemolytic streptococcal infection
• Antibodies produced to fight invading organisms also react against glomerular tissue
• Both kidneys usually affected
• Mild cases generally recover within a couple of weeks

• Wilms’ Tumor (Nephroblastoma)
• Embryonal adenosarcoma is thought to have a genetic basis
• Most discovered before age 3 years
• One of the most common malignancies of early life
• Few or no symptoms during the early stages of growth
• Abdominal mass usually found by parent or during routine health checkup

• Wilms’ Tumor (cont.)
• IV pyelogram reveals a growth, tumor compresses kidney tissue, usually encapsulated
• May cause hypertension

• Until the tumor has been surgically removed, abdominal palpation must not be performed

• A sign above the bed and a notation on the chart must clearly state no abdominal palpation

• Wilms’ Tumor (cont.)

• Treatment
  — Combination of surgery, radiation, and chemotherapy
  — Affected kidney and tumor are removed as soon as possible after diagnosis confirmed

• Nursing care
  — Preoperative
  — Avoid abdominal examination by caregivers
  — Routine postoperative care

• Hydrocele

• Excessive amount of fluid in sac that surrounds the testicle

• Causes scrotum to swell

• Chronic hydrocele that persists beyond 1 year is corrected by surgery

• Cryptorchidism

• Testes fail to descend into the scrotum

• Unilateral form is more common

• Testes are warmer in abdomen, sperm cells begin to deteriorate

• If both testes are involved, sterility can result
- Often accompanied by inguinal hernia
- Testes continue to secrete hormones directly into the bloodstream, so secondary sex characteristics are not affected

Cryptorchidism (cont.)

- Treatment
  - Hormonal management before surgery consists of the administration of human chorionic gonadotropin (hCG)
  - May precipitate descent of the testes into the scrotal sac
  - Orchiopexy improves the condition, fertility rate among these patients may be reduced
  - Increased risk of testicular tumors as the child reaches adulthood

Cryptorchidism (cont.)

- Nursing care
  - Scrotal support
  - Prevent contamination of suture line
  - Teach testicular self-exam
  - Psychological and emotional support
  - Surgery on “private parts” can be embarrassing
  - Nurse assures the child that his penis will not be affected

Impact of Urinary or Genital Surgery on Growth and Development

- Between 3 and 6 years of age, the child becomes curious about sexual differences and may masturbate
- Surgical interventions during this stage of development require guidance and preparation in order to minimize negative impact on growth and development
Question for Review

What daily nursing assessment should be omitted in a child diagnosed with a Wilms’ tumor?

Review

Objectives

Key Terms

Key Points

Online Resources

Review Questions