Chapter 22 Clients with Integumentary System Disorders

Structure and Function [corresponds to Figure 22-2]

- Functions of skin:
  - Protect body from infection
  - Prevent fluid loss, protect against dehydration
  - Regulate body temperature: excretes fluids & electrolytes, stores fat
  - Collect sensory information: heat, cold, touch, pressure, pain
  - Manufactures vitamin D

- Terms: integumentary system, skin integrity

- Epidermis - tough outer layer 1 mm thick

- Dermis
  - True skin, contains appendages (hair, nails)
  - Two layers
    - Papillary layer - ridges as in fingerprints
    - Reticular layer – rebound or elasticity
    - Stretch marks
  - Capillaries to stratum germinativum of epidermis – where new cells are made

- Appendages
  - Hair
    - Arrector pili muscle – goose bumps
    - Hirsutism
    - Alopecia
  - Sebaceous glands
    - Secrete sebum (oil)
    - Cerumen (earwax)
  - Sudoriferous glands (sweat glands)
    - Eccrine glands
    - Apocrine glands – large, in armpits and genital area
  - Nails – keratinized cells; nail bed, cuticle, nail root; 0.5 mm/wk
    - Terms: vasodilatation, vasoconstriction
  - Subcutaneous layer (superficial fascia)
    - Terms: adipose, superficial fascia

- Skin color [corresponds to Box 22-1]
  - Melanin
    - Freckles (lentigo)
    - Albinism
    - Jaundice
  - Cyanosis
  - Pallor
  - Blushing

Skin Integrity

- Common skin lesions [corresponds to Box 22-2]
  - Primary lesions [corresponds to Figure 22-4]
  - Secondary lesions [corresponds to Figure 22-5]
  - Vascular lesions [corresponds to Figure 22-6]
Pressure Ulcers (decubitus ulcers, pressure sores, or bedsores)

° Causes
  o Unrelieved pressure causing deficiency in blood supply
  o Pressure points [corresponds to Figure 22-7] – reactive hyperemia
  o Friction
  o Shearing force

° Risk factors
  o Immobility
  o Inadequate nutrition
  o Edema
  o Fecal and urinary incontinence – maceration of softening of tissue
  o Decreased mental status
  o Diminished sensation
  o Excessive body heat
  o Advanced age
  o Other factors

° Stages of pressure ulcer formation
  o Stage I nonblanchable erythema
  o Stage II superficial ulcer
  o Stage III ulcer to subcutaneous tissue
  o Stage IV extensive destruction (tissue, muscle, bone, or tendon); tunneling

° The RYB Color Code
  o Protect (cover) red
  o Cleanse yellow
  o Debride black

Nursing Care

° Priorities in nursing care: prevent ulcer formation, promote healing; frequent turning, monitor and report reddened areas, cover open areas

° Assess common pressure sites [corresponds to Box 22-3]
  o Norton’s risk assessment tools [corresponds to Table 22-1]
  o Braden’s scale [corresponds to Figure 22-11]
  o Provide a turning schedule
  o Use supportive devices [corresponds to Table 22-2]
  o Report signs of infection and obtain wound specimen
  o After wound is debrided, treat as yellow, then red [corresponds to Box 22-4]

° Nursing Process Care Plan: Client with Pressure Ulcer

Infections, Infestations, and Chronic Disorders

° Bacterial infections
  o Impetigo superficial strep or staph infection, highly contagious
    • Manifestations: small red macule become vesicle that ruptures; loose, honey-color crust; face, hands, neck, extremities
    • Treatment: wash with soap, topical antibiotic; sometimes oral antibiotics
o Furuncles (boil) or carbuncles (extensions of furuncles) – staph infection in hair follicle
  • Manifestations: high fever, localized pain; axilla, back of neck, buttocks
  • Treatment: cleanse with antibacterial, apply warm moist compress; do NOT squeeze; incise boil and dress wound; antibiotics
  • Special care needed for infections on face, can spread to cranial sinuses - pyemia

o Cellulitis - infection of dermis and epidermis caused by hyaluronidase
  • Manifestations: spreading hot red tender area, can spread and lead to sepsis
  • Treatment: treated with antibiotics

° Priorities in nursing care for clients with bacterial infections – focus on preventing spread, teach about contamination by touch; report spreading cellulitis
° Viral infections
o Herpes Simplex – viral, Type 1 usually above waist, Type 2 usually below waist
  • Manifestations: Type 1 fever blister, cold sore, canker sore
  • Latent till activated by fever, emotion, menses, cold, or sun; contagious when active
  • Treatment: antiviral acyclovir as early as possible, analgesics for pain

o Herpes Zoster – shingles, caused by varicella zoster virus (similar to chickenpox)
  • Manifestations: starts with itching, tingling, burning; then headache and fever when vesicles form; pain along region supplied by never; crusting after 7-21 days
  • Ophthalmic herpes zoster can cause corneal damage and blindness
  • Pain after healing postherpetic neuralgia
  • Treatment: analgesics for pain, antihistamines for itching, corticosteroids for inflammation, antiviral to lessen extent of lesions, cool moist compresses, Capsaicin ointment for pain

o Warts – verrucae, caused by human papillomavirus (HPV)
  • Most round, raised thickened areas of skin; transmitted by skin contact
  ↑ Plantar warts (soles), flat, can be painful
  ↑ Condyloma acuminata (genital), sexual transmission, can be precancerous (see Ch 31)
  • Treatment: topical treatment; immunity develops in up to 5 years; excision of plantar warts

° Priorities in nursing care for clients with viral infections– alleviate pain, provide emotional support, encourage medication and lip moisturizers for cold sores
° Fungal infections
Tinea – dermatophytes (fungi), ringworm [corresponds to Figure 22-16]

- Tinea pedis – athlete’s foot – manifestations: red, itchy, scaly with painful cracks, highly contagious
- Tinea capitis – manifestations: scalp fungus, causes temporary hair loss, can spread from kittens and puppies to humans
- Tinea corporis – manifestations: itchy, red, scaly skin
- Tinea cruris – manifestations: infection in groin (jock itch)
- Tinea unguium – manifestations: onychomycosis (nail fungus)

- Treatment: antifungal topical lotions, ointments, powders and sprays
- Teach clients that antacids interfere with oral medication absorption, may alter effect of warfarin

 Priorities in nursing care for clients with fungal infection – prevent spread of infection; teach to consult doctor if OTC preparations are not effective

Parasitic infestations

- Pediculosis – lice infestation (capitis, corporis, pubis)
  - Manifestations: severe itching of bites
  - Treatment: washing with OTC treatment (Rid or Kwell), comb hair shaft with fine-toothed comb; shower; wash all clothes and bedding

- Scabies – itch mite
  - Sexual or person-to-person contact
  - Manifestations: dark line in skin from female laying eggs, itching in burrow line, worse at night
  - Treatment: Kwell left on skin for 8-12 hr; wash clothes and bedding

 Priorities in nursing care for clients with parasitic infestations – killing parasite, relieving itching; teach client to follow directions carefully; be factual and nonjudgmental

Chronic Skin Conditions

- Acne – sebaceous gland disorder, responds to hormonal stimulation
  - Terms: comedones, acne vulgaris (adolescents), acne rosacea (chronic)
  - Treatment: OTC acne remedies, tetracycline, isotretinoin (Accutane)
  - Caution clients not to become pregnant while using Accutane

- Psoriasis – chronic genetic inflammatory, noninfectious, not contagious; immune-mediated
  - Term: epidermal proliferation – 6-9 times normal rate
  - Manifestations: bilateral symmetry, circular patches that thicken, may bleed; itching and burning; often scalp, elbows, knees, lower back
  - Treatment: steroids, anthralin, tazarotene, phototherapy; steroids

- Eczema (atopic dermatitis) – linked to allergies and heredity
  - Manifestations: patchy lesions that contain papules and vesicles that rupture, with crusty yellow exudates; red and dry, cracking
  - Treatment: remove allergen if possible; moisturize with ointment or petroleum jelly, steroids for itching and inflammation

 Priorities in nursing care for clients with chronic skin conditions – emotional support to client; encourage compliance; provide educational material

Burns (see Ch. 36)
Skin Cancer
° ABCD rule = asymmetrical, border irregular, color varies, diameter of 6 mm or more
° Term: opportunistic
° Major risk factor prolonged sun exposure
° Actinic keratosis precancerous
° Basal cell carcinoma most frequently seen
  o Manifestations: pearly papule with waxy border, possible central crater, slow growing, usually on face and sun-exposed areas
  o Treatment: surgical removal
  o Recurrence rate 40-50%
° Squamous cell carcinoma
  o Manifestations: firm nodule with crust or central ulceration, hard margins, may bleed and become painful as grows, can spread quickly through lymph, can lead to death; may be found on damaged skin
  o Treatment: surgical or chemosurgical removal
° Malignant melanoma
  o Most serious. If in epidermis and dermis, spreads easily
  o Manifestations: lesion may appear raised with small lesions around edges
  o Treatment: wide surgical incision, maybe skin graft; chemotherapy for metastasis, radiation for metastasis, not for lesion
° Mycosis fungoides – cutaneous T-cell lymphoma
  o Manifestations: initially similar appearance to psoriasis or seborrheic dermatitis; later severe pruritus, ulcers, fissures; multiple organ effects
  o Opportunistic in depressed immune systems
  o Treatment: not curable but slowed with phototherapy
  o Focus on wound care, teaching, and client support

Plastic or Reconstructive Surgery
° Cosmetic surgery
  o Rhytidoplasty – face lift
  o Rhinoplasty – nose changes
  o Mammoplasty – breast reduction or augmentation
  o Dermabrasion – scouring of skin surface, topical medication and laser or light
° Skin grafts (see Ch. 36)
° Liposuction – removal of subcutaneous tissue, creates firm scar between layers of skin and fat
  o Complications – bleeding, serum accumulation, bruising; deaths from removal of excessive amount of fat and extensive blood loss

Critical Thinking Care Map: Caring for a Debilitated Client