

Skin and Soft Tissue Lesions

Assumptions

The student understands basic anatomy and physiology of the skin and soft tissue structures including cell types and components of each layer.

Goal

The student will be able to describe the management of a patient with benign and malignant skin and soft tissue lesions, and develop a diagnostic and treatment plan for each.

Objectives

Benign Lesions

Describe the management of skin and soft tissue injuries (i.e., trauma, bites, and pressure wounds):

1. Describe types of wound closure including primary, secondary, and delayed primary.
2. Identify differences in wound closure for clean versus contaminated wounds.
3. Recite proper use of local anesthetics including types, advantages and disadvantages of epinephrine, safe dosages, potential toxicities, precautions for digits.
4. Describe stages of pressure ulceration.
5. Describe characteristics and treatment of skin and soft tissue infections such as:
 - a. Cellulitis
 - b. Folliculitis, furuncle, carbuncle
 - c. Hidradenitis suppurativa
 - d. Necrotizing soft tissue infection
6. Describe burn classification, calculation of total body surface area burned, resuscitation, and wound management.
7. Describe characteristics and treatment of benign skin and soft tissue lesions, and identify which lesions have malignant potential:
 - a. Cysts (epidermal and dermoid)
 - b. Keratosis
 - c. Nevi
 - d. Hemangioma
 - e. Arteriovenous malformation
 - f. Lipoma
 - g. Acrochordans (skin tags)

Malignant Lesions

1. Describe characteristics, typical location, and incidence of Squamous Cell Carcinoma.
 - a. Identify precursor lesions including actinic keratosis and Bowen's Disease.
 - b. Describe risk factors including sun exposure, ethnicity, environmental and occupational exposures, impaired immunity, and prior wounds.
 - c. Describe treatment options including surgical excision, treatment of palpable nodes, and role of radiation.
 - d. Discuss prognosis, risk of recurrence, and risk of metastasis.

Skin and Soft Tissue Lesions (continued)

Objectives

Malignant Lesions (continued)

2. Describe characteristics, typical location, and incidence of Basal Cell Carcinoma.
 - a. Identify risk factors.
 - b. Discuss treatment options for small and large lesions and the role of radiation.
 - c. Describe prognosis, risk of recurrence, and risk of metastasis.
3. Describe characteristics, typical location, and incidence of melanoma.
 - a. Identify precursor lesions including congenital nevi, dysplastic nevi, and Spitz nevi.
 - b. Describe melanoma including subtypes, prognosis, and risk factors.
 - c. Describe Breslow's thickness, Clark's levels, and ulceration, and how they relate to prognosis.
 - d. Discuss treatment options including margin size, assessment of lymph nodes, treatment of metastasis, role of radiation, and role of immunotherapy.
 - e. Describe risk of recurrence and risk of metastasis.
4. Describe characteristics and incidence of soft tissue sarcomas.
 - a. Identify differences in frequency and type between childhood and adult sarcomas.
 - b. Identify risk factors including radiation, chemical exposure, genetic disorders, and chronic lymphedema.
 - c. Describe prognosis relative to histologic type, histologic grade, tumor size, and depth.
 - d. Discuss diagnostic options including fine needle aspiration (FNA), core needle biopsy, incisional biopsy, and excisional biopsy.
 - e. Discuss treatment options including surgical excision, radiation, chemotherapy, and treatment of metastasis.
 - f. Describe characteristics and treatment of Kaposi's sarcoma, and its relationship to HIV and immunodeficiency.

Problems

1. An 8-year-old boy with a 6cm soft tissue mass on his right thigh.
 - Further data on history and physical exam?
 - Differential diagnosis?
 - Diagnostic work-up?
 - Most likely location of metastasis?
2. A 45-year-old deeply tanned blonde woman with an irregular raised pigmented lesion on her shoulder.
 - Further data on history and physical exam?
 - Findings suggestive of malignancy?
 - Diagnostic work-up?
 - If lesion was 0.5mm in depth, treatment?

Skin and Soft Tissue Lesions (continued)

Problems (continued)

3. A 32-year-old man with a 3cm dog bite on his left forearm.
 - Further data on history and physical exam?
 - Describe management of wound including local anesthesia and closure.
4. A 75-year-old man with a waxy lesion with pearly rolled borders and a central ulcer on his nose.
 - Further data on history and physical exam?
 - Differential diagnosis?
 - Diagnostic work-up?
5. A 25-year-old woman with bilateral axillary lesions consisting of multiple draining sinus tracts.
 - Further data on history and physical exam?
 - Differential diagnosis?
 - Treatment options for acute versus chronic lesions?

Skills

1. Cutaneous infiltration of local anesthetic for excision and nerve blocks
*Refer to the [ACS/ASE Medical Student Simulation-based Surgical Skills Curriculum](#) (Year 3 – Module 8)
2. Incision and drainage of abscesses
3. Skin biopsy (punch and excisional)

Teaching Hints

1. Develop a photo library of these lesions to show students.
2. Demonstrate skills of infiltration of local anesthetic, and discuss means to decrease pain on infiltration.
3. Demonstrate the proper handling of tissues, surgical dissection, and excisional technique. Be sure to discuss appropriate margins, marking the specimen, closure options, and decisions to be made such as lymph node excision.
4. Discuss the characteristics of a nevus that suggest a melanoma.

Prevention

1. Stress the importance of sunscreen and other skin protection, particularly in fair-skinned individuals.
2. Emphasize the importance of self-exam of skin lesions for suspicious changes.
3. Remove congenital hairy nevi prior to adulthood.
4. Describe methods for prevention of pressure ulceration.

Special Considerations

1. Evaluation and management of skin lesions in the immunosuppressed patient.
2. Criteria for referral to a burn center in the management of burn injury patients.
3. Consideration for inhalation injury in burn patients.