

CASE STUDY 3

Osteomyelitis of Left Foot

EASY

GENDER

M

AGE

64

SETTING

- Hospital

ETHNICITY/CULTURE

- White American

PREEXISTING CONDITIONS

- Status-post femoral-popliteal bypass

COEXISTING CONDITIONS

- Peripheral vascular disease

LIFESTYLE

- CPA

COMMUNICATION

- English

DISABILITY

- Decreased mobility

SOCIOECONOMIC STATUS

- Middle

SPIRITUAL/RELIGIOUS

- Lutheran

PHARMACOLOGIC

- Ticarcillin disodium/clavulanate potassium (Timentin)

PSYCHOSOCIAL

- Anxiety
- Depression

LEGAL

ETHICAL

ALTERNATIVE THERAPY

PRIORITIZATION

- Antibiotic therapy
- Promote wound healing

DELEGATION

- RN
- Client education

THE MUSCULOSKELETAL AND REPRODUCTIVE SYSTEMS

Level of difficulty: Easy

Overview: This case involves assessment of the client's present problems. The nurse must be knowledgeable about osteomyelitis and the need for immediate medical and nursing interventions to prevent systemic complications and chronic osteomyelitis. The case involves pain management and antibiotic administration with knowledge of unintended effects of analgesic and antibiotic medications, and interventions for these effects.

Client Profile

Mr. Y is a 64-year-old certified public accountant who was discharged from the hospital three weeks ago after amputation of the left great toe related to complete loss of circulation in his extremity. Mr. Y is married and has a 28-year-old daughter in college. His wife is an elementary school teacher. He and his family own a three-bedroom co-op in a newly developed neighborhood.

Case Study

Mr. Y's past medical history includes hypertension and arterial insufficiency. He is status-post (S/P) femoral-popliteal bypass three weeks ago. His family history includes diabetes mellitus (mother) and hypertension and peripheral vascular disease (father). Mr. Y reports that both he and his wife have good health insurance and that he receives a salary while recuperating from surgery. However, he says he is concerned about the continuation of his salary, which is dependent on the length of time the infection will take to heal. Vital signs are:

Blood pressure: 140/94

Pulse: 94

Respirations: 20

Temperature: 101.4° F

The entire foot is tender and warm to touch. There is a moderate amount of mildly odorous drainage coming from the wound. The nursing history and physical examination is completed by the nurse, after which the health care provider reviews the data, asks the client about history of allergies, which the client denies. The health care provider continues the history and physical examination, and a specimen from the infected site is sent to the lab for analysis. The following diagnostic studies are ordered: radionuclide bone scan of the left foot, and a magnetic resonance imaging (MRI), blood culture and gram stain, culture and sensitivity of the wound, white blood cell (WBC) count with differential, and erythrocyte sedimentation rate (ESR). The bone scan reveals infection of the bone marrow, and the MRI identifies calcification of the bones of the foot and provides definitive diagnosis for osteomyelitis. The blood culture and gram stain are positive for *P. aeruginosa* and *Staphylococcus aeruginosa*. WBC with differential reveals:

White blood cell (WBC) count: 13,000/mm³

Neutrophils: 82%

Eosinophils: 4%

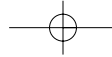
Basophils: 2%

Lymphocytes: 43%

Monocytes: 8%

Erythrocyte sedimentation rate (ESR): elevated, 90%

After the multidisciplinary team reviews the diagnostic studies, a diagnosis of osteomyelitis of the left foot is confirmed; the findings are discussed with the client; and plans for surgical debridement are decided upon by the team and Mr. Y. The debridement is done and the surgical plan is to implement high doses of parenteral antibiotics initially followed by oral antibiotics and serial bone scans. Specific orders are written for the surgical team to change the wound dressing during daily rounds.



CASE STUDY 3 ■ OSTEOMYELITIS OF LEFT FOOT 165

The following are prescribed:

- Ticarcillin disodium/clavulanate potassium (Timentin) 3.1 g IV q4h
- 0.9% NaCL at 100 mL per hour
- Vitamin A (Aquasol A) 15,000 IU daily
- Vitamin C (ascorbic acid) 500 mg PO two times per day
- ESR, hemoglobin, WBC, albumin levels

Questions

1. Discuss the pathophysiology of osteomyelitis.
2. Discuss groups of persons in whom osteomyelitis is most difficult to manage.
3. Discuss indirect and direct osteomyelitis.
4. Discuss the organism that is the most common cause of osteomyelitis.
5. Discuss the psychosocial impact of the client's amputation on his well-being and the risk that further surgery may be necessary.
6. Discuss common nursing diagnoses for clients with osteomyelitis.
7. What are the purposes for the prescribed orders?
8. What are the most common adverse reactions, drug-to-drug, drug-to-food/herbal interactions for the prescribed medications?
9. Discuss discharge instructions for the client with osteomyelitis.

