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Case Report

A case report: Pre-gangrene left foot with COPD and hypertension

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Abstract

Pre-gangrene is the penultimate stage of vascular insufficiency before gangrene sets in; the term is usually applied to ischemia of lower limb. A male patient admitted with complains of severe foot pain, tenderness (2-3 months), and tingling & numbness. In a past medical history, he was suffering with hypertension (HTN) and COPD. He was taking amlodipine 5 mg tablet for HTN for daily basis. The X-ray finding shows that patients were suffering COPD. The patient is known case of COPD from last 3 year. After a diagnosis he has go through a surgery for left foot pre-gangrene (below knee amputation). During surgery general anesthetic and some post and pre-operative medication is given. During hospitalization patients taking various medications like antibiotic, bronchodilator and anti-hypertensive. Specifically in this patient amoxicillin and Clavulanic acid anti-biotic combination is used to treat gangrene.

Keywords: Hypertension, pre-gangrene, COPD, Antibiotic, bronchodilator.

INTRODUCTION

Gangrene is a clinical condition of ischemic and necrotic tissue, often circumferential around a digit or extremity. It is identified by discolored or black tissue and associated sloughing of natural tissue planes. Gangrene commonly affects the arm and legs, including the toes and fingers. It can also occur in the muscles and in organ inside the body, such as the gallbladder.[1,2] pre-gangrene(pree-gang-reen). the penultimate stage of vascular insufficiency before gangrene sets in; the term is usually applied to ischemia of the lower limb. Clinically, it is manifested by numbness, tingling, severe pain, and discoloration of the affected area.[3] There are several types of gangrene, but three most common variation are Dry, wet or Gaseous gangrene. In dry gangrene, the necrotic and normal tissues are distinguished by a distinct demarcation line. There is a clearly defined death area with little or no discharge or pus when the cause of the gangrene is in the blood vessels (e.g., in peripheral vascular disease and polycythemia). Wet gangrene is type of the gangrene that developed as a result of infection or damage.[2,5] There are two types of gangrene: diabetic and non-diabetic.[2] dry gangrene is a type of gangrene that occurs when mummification is a term used to describe dry gangrene. It developed more slowly that wet gangrene and is most often linked to chronic illness, such as diabetes. The skin becomes dry, shrivelled, and dark in color, ranging from brown to purplish-blue, with a chilly or icy sensation to the touch.[6,7] Treatment for gangrene involved removing the affected tissue(amputations), preventing infection or treating any existing infection, and treating the problem that led to gangrene developing. Gangrene that's caused by an infection can usually be treated with antibiotics, can be given as tablets or injections. Hyperbaric oxygen therapy is also used to treat gangrene.[8] Dry gangrene is very common in individuals suffering from arteriosclerosis, high cholesterol, diabetes, and smoking. In a dry gangrene, due to necrosis, the tissue becomes shrunken and blackened and gets detached. In this condition, autoamputation is usually practiced due to occurrence of clear lines of demarcation. If dry gangrene is left untreated or treatment is delayed, it may progress to cause infection and complicated the condition. Dry gangrene is usually less severe than wet gangrene and may result in auto-amputation (i.e., spontaneous detachment from the body and elimination of a gangrenous part), whereas wet gangrene may lead to cellulitis, loss of the extremity, septicemia and death.[9] Globally, gangrene cause an increase in morbidity and mortality. It has spread widely among people of various ethnic groups. Gangrene affects 0-5 percent of the populations in India, according to one study. The majority of ill people are between the age of 20and 40.[4]

CASE DETAILS

A 69-year-old Male was admitted to general medicine ward, on date 12/09/2022 with the chief complaints of severe left foot pain, tenderness for 2-3 months, Tingling & Numbness and after a physical examinations doctor diagnosed that case of pre-gangrene left food. Doctor advises to a patient to perform a surgery for pre-gangrene. After a doctor consult perform patients' surgery- Below Knee Amputation on 20/09/2022. Patients has past medical history in Hypertension (HTN-5 year) and he was taking Amlodipine 5 mg tablet daily for HTN. In a past history, 3 years ago he was suffering from chronic obstructive pulmonary disorder after a cure the disorder that wills not taking future medication for COPD. No history of

alcohol and tobacco chewing. Her family member has no abnormal genetic disorder or a history of genetic disorder. Patient occupation is Farmer. On physical examination, the patents were afebrile, Pulse was 94 beats/min, Temperature was 98 •F, and Blood pressure 120/70 mmHg. Regular rhythm of S1 and S2 heart sound audible at aortic, pulmonic, tricuspid, and mitral areas. Laboratory findings show complete blood count Hb 14.3gm/dl that show patient was not suffering from any anemic condition, RBC 4.86million/cmm, PCV 43.6%, MCV 89.7fl, MCH 29.4pg, MCHC 32.8gm/dl, RDW 13.2%, WBC 7540/cmm, Neutrophiles 54%, Lymphocytes 33%, Eosinophils 02%, Monocytes 11%, basophils 00%, platelet 261000, NLR 1.63, PCT 2.36ng/ml, MPV 9.0fl, PDW 14fl, Random blood sugar was 85.4mg/dl, creatinine 0.60, sodium 143.7mEq/l, Potassium 4.2mEq/l. in radiological findings, the X-ray of chest AP view; prominent broncho-vascular marketing noted in both lung fields, no active parenchymal lesion is seen. The X-ray left leg (AP & LAT); no evidence of any fracture is seen, no evidence of dislocation or subluxation, no periosteal reaction is seen, no abnormality detected. During hospitalization patients on various medication like some antibiotic and Bronchodilator. In a first day of hospitalization patients on tab. Ultracet for pain relief, tab. Trental for peripheral vascular disease, tab. Stilo for reducing leg pain, tab. Pantoprazole for acidity, tab. Doxolin and Neb. duolin for COPD. On A first day of admission patient was not taking hypertension medication according to nursing medication administration chart. Doctors perform below knee amputation surgery on 20/9/22, patents post operative medication is inj. moxiclav, inj. Pan, inj. Emset, inj. Dynapar, inj. NS/RL. During a surgery general anesthetic agent was used. After a surgery during hospitalization patients was on various medication like inj. Moxiclav for bacterial infection, tab. Doxolin and Neb. duolin for COPD, and other medication like amlodipine, ondansetron, pantoprazole, cilostazol, diclofenac, IV fluids (normal saline, ringer lactate), salbutamol.

DISCUSSION

Hypertension is one of the most cause of vascular disease, and the prevention of vascular disease reduced risk of gangrene. Anti-hypertensive medication, exercise, and diet are all ways of controlling hypertension. In some instances, an extremity is in danger of developing gangrene due to severe vascular disease. COPD is also associated with an increased risk of peripheral artery disease and mortality.[10] Risk factors for gangrene include: smoking. Obesity, diabetes, high blood pressure, and other cause of vascular disease. Excessive alcohol intake, which can lead to nerve damage. In the early stages of gangrene, intravenous antibiotic and debridement are usually enough to cure it. Gangrene can progress to a deathly infection if left untreated.[11] if not treated promptly, gangrene can lead to serious problems. Bacteria can quickly spread to various tissues and organs. To save your life, you may need to have a body part amputated. Scarring or the necessity for reconstructive surgery may result from the removal of infected tissue.[12,13,14] In this patient during hospitalization patients taking antibiotic therapy. In a gangrene some gram positive and gram-negative antibiotic medication is used to treat gangrene. Penicillin or cephalosporine like antibiotic are gram positive antibiotic and aminoglycoside, metronidazole and clindamycin are gram negative antibiotic. In this patients Tab. moxiclav (amoxicillin + clavulanic acid) antibiotic is used.

CONCUSSION

Understand relationship between Hypertension, COPD, and pre-gangrene left foot. The relationship between specific drug and pre gangrene left foot has been study systemically. Patient knowledge about his/her medication and diseases correctly. They should not self-medication or buy an OTC preparation without consultation of physician. Clinical suspicion and early diagnosis are key improve its management.

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