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## Case Report on Cellulitis with Diabetes

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### **Authors' contributions**

*This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.*

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### **Case Study**

## **ABSTRACT**

**Introduction:** Cellulitis is a bacterial skin condition that is very frequent. In reality, cellulitis affects about 14 million people in the United States each year. If left untreated, the infection can spread to any part of the body and cause serious problems. Obesity and an inactive lifestyle are two of the most common causes of type 2 diabetes.

**Clinical Findings:** Pain or tenderness in the leg, Skin redness or inflammation that gets bigger as the infection spreads, Skin sore or rash that starts suddenly, and grows quickly , Warm skin.

**Diagnostic Evaluation:** Hb%- 10.7, MCHC- 33.4, MCV- 88.8, MCH- 29.8, Total RBC count- 3.6, Total WBC count- 7200, Total platelets count - 1.63, HCT- 37, Monocytes- 01, Granulocytes- 75, Lymphocytes - 20, RDW - 17.2, Eosinophils - 01.

**Therapeutic Interventions:** Inj. Ceftriaxone 1mg x BD (IV), Inj. Pan 40 mg x OD (IV), Tab. Limcee 500 mg x OD, Tab. Pan 40 mg x OD, Protein powder 2 tsp x TDS, Inj. Insulin.

**Outcomes:** A Male Patient of 88 year old was admitted in AVBRH with a chief Complaint of Cellulitis after getting treatment his condition is improving.

**Conclusion:** Diabetic foot infections that aren't treated well or aren't treated at all result in lower-extremity amputation in about 10% of patients. Amputations of the lower extremities can be debilitating and have a significant impact on the patient's quality of life.

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## 1. INTRODUCTION

Streptococci are the most common bacteria that cause cellulitis, which is an acute bacterial infection of the skin and subcutaneous tissue. Pain, warmth, fast developing erythema, and oedema are symptoms and indicators. In more serious infections, fever and enlargement of regional lymph nodes may ensue. Diagnosis is based on appearance; cultures may be helpful, but antibiotic treatment should not be postponed pending the results. With prompt treatment, the prognosis is excellent [1].

Cellulitis is caused by a variety of factors, Injury, Weakened immune system, Skin conditions, Chronic swelling of your arms or legs (lymphedema), History of cellulitis and obesity. Streptococcus pyogenes is a kind of bacteria. Staphylococcus aureus is a kind of bacteria. Staphylococcus aureus or group A beta-haemolytic Streptococci (e.g., Streptococcus pyogenes) are the most common causes of cellulitis. The skin barrier is frequently harmed. Because the organism's enzymes (streptokinase, DNase, and hyaluronidase) break down cellular components that would otherwise contain and localise inflammation, streptococci generate a broad, fast spreading infection. Cellulitis caused by Staphylococcus aureus is usually more localised and occurs in open wounds or cutaneous abscesses [2,3].

Cellulitis is a skin and subcutaneous tissue infection that spreads quickly. It is diagnosed clinically when a no purulent erythemic rash with uneven borders, oedema, and local soreness appears. Cellulitis in the lower limbs most usually presents as a secondary condition following trauma, which is most commonly observed in sports-related trauma or trauma involving foreign bodies [4].

Patients with a BMI more than 31, geriatric patients, and patients with a history of diabetes or immunological impairment have other prevalent presentations. Cellulitis is presented to a chiropractic clinic. Cellulitis is a painful skin ailment that affects many people. It may show as

a discoloured, swollen area that is hot and painful to the touch at first. The swelling and discolouration can spread swiftly [5]. Cellulitis usually appears red or pink on light skin. It might seem dark brown, grey, or purple on dark skin. The infection may occur on any part a person's body , it most commonly affects the feet and lower legs [6].

**Patient Identification:** A male patient of 88 year old admitted on 08/10/2021 in AVBRH in male surgery ward with a known case of cellulitis over right leg. He is 52 kg in weight and 152 cm.

## 2. PRESENT MEDICAL HISTORY

A male patient of 88 years old was brought to AVBRH on 08/10/2021 with a chief complaint of having non healing wound or ulcer over right lower limb since 1 month.

**Past Medical History:** A Male of 88 year old was brought to AVBRH on date 08/10/2021 having history of insect bite 1 month back except that he don't have any other past health history like fever, Nausea, Vomiting, cold, cough and breathlessness ,etc. He don't have gone through any surgical intervention in past.

**Family History:** There are six members in his family and he belongs to the middle class family except the Patient all other family members are healthy and they don't have any disease condition.

**Past Intervention and outcomes:** A Male Patient of 88 year old was admitted in AVBRH, he was diagnosed with Cellulitis, and his treatment was still going on in Male Surgery Ward.

Before admitting in AVBRH, Ayurvedic medicines for ulcer were taken by him, but he don't got any symptomatic relief.

**Outcomes:** A Male Patient of 88 year old was admitted in AVBRH with a chief Complaint of Cellulitis after getting treatment his condition is improving.

### Nursing Implication:

#### Chart 1. Impaired skin integrity related to disease condition [7]

**Outcome:** The patient will re-establish healthy skin integrity.

| Interventions  | Rationale  |
|--|--|
| Assess the skin of whole body of patient.  | To examine the severeness of cellulites on skin and other affected area that requires special attention. |
| Educate the individual and care giver about proper hygiene of skin by washing skin with soap and water | To maintain the hygiene of the affected areas of skin through washing with water and soap                |
| Administer antibiotic as per prescription of physician.  | To treat the cellulites through the use of antibiotic therapy  |

#### Chart 2. Risk for infection of skin [7]

**Outcome:** The patient will prevent the illness from spreading to the rest of his body.

| Interventions   | Rationale   |
|---|---|
| Assess the skin of patient on whole body.                         | To know the severity of cellulites and any affected part of skin for giving wound care. |
| Administer antibiotic drugs as prescribed by physician.           | To prevent spread of any infection and to increase antibiotic action.                   |
| Trim the fingernails of patient and ensure frequent hand hygiene. | Long finger nails tend to harbour more bacteria.  |

**Clinical findings:** Pain or tenderness in the leg, Skin redness or inflammation that gets bigger as the infection spreads, Skin sore or rash that starts suddenly, and grows quickly , Warm skin.

**Etiology:** The microorganisms i.e. bacteria e.g. most often Staphylococcus and Streptococcus, enter into person's body by any crack or fissure in the skin, this may leads to cellulitis. Methicillin-resistant Staphylococcus aureus (MRSA) is more dangerous staphylococcus infection that is becoming more common.

Although cellulitis can occur everywhere on the body, the lower leg is the most prevalent site. Bacteria are more likely to invade disturbed areas of skin, such as cuts, puncture wounds, an ulcer, athlete's foot, or dermatitis. Cellulitis can be caused by animal bites. Bacteria can also get into the body through dry, flaky, or inflamed skin.

**Diagnostic Assessment:** Hb%- 10.7 gm%, MCHC- 33.4 picogram , MCV- 88.8 picogram, MCH- 29.8 picogram, Total RBC count- 3.6 million/cu.mm, Total WBC count- 7200/ cu.mm, Total platelets count - 1.63 lacs/cu.mm, HCT- 37%, Monocytes- 01%, Granulocytes- 75%, Lymphocytes – 20%, RDW - 17.2%, Eosinophils – 01%.

**Therapeutic Interventions:** Inj. Cefixime 1mg x BD (IV), Inj. Pan 40 mg x OD (IV), Tab. Limcee 500 mg x OD, Tab. Pan 40 mg x OD, Protein powder 2 tsp x TDS, Inj. Insulin

### 3. DISCUSSION

A male patient of 88 years old admitted in AVBRH on 08/10/2021 from Vidul, District-Yavatmal having complaint of Cellulitis is having history of insect bite 1 month back except that he don't have any other past health history like fever, Nausea, Vomiting, cold, cough and breathlessness but still having non healing wound or ulcer over right lower limb since 1 month.

Investigations were done as soon as he get admitted in the hospital, and the proper treatment was given to him after which his condition was improving, and the treatment was kept going on until my last date of care [8]. Cellulitis is a skin infection of the subcutaneous tissues that is clinically identified by a non-purulent erythematic rash with striations and uneven borders, swelling, and local soreness, as shown in this case [9].

It also has the ability to spread quickly to other parts of the body in close proximity to the initial

dermatologic outbreak. A 78 years-old man could suffer serious repercussions from an infection that spreads through the leg. The risk of toxic shock was not to be disregarded or treated lightly because the rash had transformed in a matter of hours [10].

#### 4. CONCLUSION

Diabetic foot infections that aren't treated well or aren't treated at all result in lower-extremity amputation in about 10% of patients. Amputations of the lower extremities can be debilitating and have a significant impact on the patient's quality of life. A successful outcome is dependent on early detection of the infection, followed by proper antibiotic medication, good wound care, and the use of surgical methods sparingly when necessary. Community pharmacists can help patients understand how to take care of their feet and recognise ulcers that can progress to skin illnesses like cellulitis.

#### CONSENT

As per international standard or university standard, patients' written consent has been collected and preserved by the author(s).

#### ETHICAL APPROVAL

As per international standard or university standard written ethical approval has been collected and preserved by the author(s).

#### COMPETING INTERESTS

Authors have declared that no competing interests exist.

#### REFERENCES

1. Stevens DL, Bisno AL, Chambers HF, Everett ED, Dellinger P, Goldstein EJC, et al. Practice guidelines for the diagnosis and management of skin and soft-tissue infections. Clinical Infectious Diseases. 2005;41(10):1373–406.
2. Nayak A, Acharya S, Ghule A. Bilateral orbital cellulitis with pan sinusitis in a female without cavernous sinus thrombosis- a rare presentation. JEMDS. 2020;9(17):1464–6.
3. Stevens DL, Bryant AE. Impetigo, Erysipelas and Cellulitis. In: Ferretti JJ, Stevens DL, Fischetti VA, editors. *Streptococcus pyogenes: Basic Biology to Clinical Manifestations* [Internet]. Oklahoma City (OK): University of Oklahoma Health Sciences Center; 2016. [Cited 2021 Nov 29]. Available:<http://www.ncbi.nlm.nih.gov/book/s/NBK333408/>
4. Skin Infections [Internet]. National Library of Medicine; [Cited 2021 Nov 29]. Available:<https://medlineplus.gov/skininfections.html>
5. Herzberger E, Aviner S, Cherniavsky E. Posttraumatic Fat Necrosis Presented as Cellulitis of the Leg. Case Reports in Pediatrics. 2012;2012:672397.
6. Cellulitis: Causes, Treatments, Symptoms, and More [Internet]. Healthline; 2021. [Cited 2021 Nov 29]. Available:<https://www.healthline.com/health/cellulitis>
7. Lewis SM, Dirkse SR, Heitkemper MM, Bucher L. *Medical-Surgical Nursing: Assessment and Management of Clinical Problems* (7th ed.). St. Louis: Mosby; 2010.
8. Hospital Admissions: Advance Directive, Patient Rights, Tests [Internet]. [Cited 2021 Nov 29]. Available:[https://www.emedicinehealth.com/hospital\\_admissions/article\\_em.htm](https://www.emedicinehealth.com/hospital_admissions/article_em.htm)
9. Hayeri MR, Ziai P, Shehata ML, Teytelboym OM, Huang BK. Soft-tissue infections and their imaging mimics: From cellulitis to necrotizing fasciitis. Radio Graphics. 2016;36(6):1888–910.
10. Infections and infectious diseases: A manual for nurses and midwives in the WHO European Region. 282.

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