Case study

Case Report on Mucormycotic Osteomyelitis of Maxilla

Abstract

Introduction The upper jaw is formed by the maxilla, one of the basic bones of the face. It is a crucial viscerocranium structure that aids in the creation of the palate, nose, and orbit. The upper teeth are held in place by the alveolar process of the maxilla, which is vital for mastication and speaking. Because of its substantial vascular supply, maxillary necrosis is uncommon compared to mandible necrosis [1]. Maxillary necrosis can be caused by bacterial infections like osteomyelitis, viral infections like herpes zoster, or fungal infections like mucormycosis, as well as trauma, radiation, and other factors [2]. Long-term use of antibiotics or corticosteroids, on the other hand, may result in an opportunistic infection. Mucormycosis is a fungal infection that mostly affects immunocompromised persons. These fungi are widespread in many people, although the symptoms have been linked to a weakened immune system. Mucormycosis is a life-threatening illness that frequently affects immunocompromised individuals due to diabetic ketoacidosis, neutropenia, organ transplantation, and elevated blood iron levels.

Clinical Findings The patient have a complaint of discomfort in the upper left side of the jaw was rapid in start, dull hurting, intermittent in character, and worse on mastication, according to the patient. A radiating headache on the left side is also a complaint.Diagnostic evaluation- CRP - 12.48m/ L, Calcium 8.1mg/dl, KFT-Ser (urea - 29mg/dl, Creatinine 0.4mg/dl, Sodium 138mmol/L, Potassium -4.3mmol/L, Albumin 2.6g/dl,)
Urine exam routine Pus cells 1-2celks, urine albumin nil, Crystal 3-4 calcium oxallates Crystal,

2D echo was done on dated 31/5/21, MRI was done, Cardiac call was done.

Therapeutic intervention- If not recognised and treated early, fungal osteomyelitis is more invasive than bacterial osteomyelitis. Treatment is given to the patient as a follow-up.
Debridement of necrotic tissue on a local level. Antibiotics - Tab Augmentine 625mg, Tab paracetamols 500mg, Inj T. T 0.5ml in a single dosage, Antifungal treatment, and Betadine gargle twice a day.**Conclusion-** A 58-year-old male was hospitalised to AVBR Hospital's Oral Surgery Ward 35 after being diagnosed with Mucormycotic Osteomyelitis of the Maxilla. The patient is being counselled on how to proceed with his or her treatment.

Keywords- Mucormycotic , Paranasal sinuses,osteomyelitis .

Introduction Osteomyelitis of maxilla is an uncommon process due to it srich vascular supply, although it can occur due to bacterial, viral, and fungal infections, especially in immunocompromised patients. Mucormycosis is caused by saprophytic and aerobic fungi Rhizopus, Rhizomucor, and Cunninghamella genera of the family Mucoraceae which frequently colonizein the oral/nasal mucosa Mucormycosis is a rare opportunistic fungal infection With

acute, aggressive, and invasive nature, seen in immunocompromised/debilitated patients, especially with diabetes mellitus. The key to successful therapy is the early diagnosis of signs and symptoms of the disease, correction of the underlying medical disorder(s), and aggressive medical and surgical intervention

Patient identification

On the 04/06/2021, a 58-year-old male patient from Nagpur was admitted to Oral Surgery Ward 35 with Mucormycotic Osteomyelitis of the Maxilla.His weight was 87 kilogrammes, and his height was 167 centimetres.

Present Medical History - Patient is admitted to oral surgery ward 58 years old, was admitted to AVBRH with chief complaints of difficulties in mastication for about one week, radiating headache on left side, loss of appetite (15 days), and weight loss. Mucormycotic Osteomyelitis of the Maxilla has been diagnosed. His haemoglobin level at the time of admission is

Past Medical History - My patient has had diabetic mallitus for around 4 years. 4 years ago, the patient had a tooth out. Alsopateint gave a history of Covid -19 infection when he was taken to a private hospital in Nagpur on April 20, 21. InjRemdisivir, injPrednisolone, Tab Acetazolamide, Tab Ivermectine are all used.

Family history - My patient's family consists of five family members. He was diagnosed with Mucormycotic Osteomyelitis of the Maxilla, although his parents had no aberrant genetic background. The parents were married in a non-consanguieous way. Except for the patient who is in the hospital, the other members of the family have no concerns about their health.

Past intervention and outcome -Mucormycosis was suspected as the cause of the patient's pain on the upper left side of the maxilla. Further analysis revealed that the patient had Mucormycotic Osteomyelitis of the Maxilla, which was subsequently identified by a histological report dated 05/06/21. On admission, the patient's blood sugar level was 250, at which time 2 units of insulin were administered. In addition, a stat dose of inj Tetanus Toxoid 0.5ml was administered.

Clining finding - The patient complained of discomfort on the upper left side of his jaw, which was rapid in start, dull hurting, intermittent in character, and worse on mastication, as well as difficulty masticating, lack of appetite, weight loss, and a radiating headache on the left side.

Physical examination- On a comprehensive examination from head to foot, it was discovered that the patient had complained of pain over the upper left jaw and difficulty masticating for one week. The patient weighed 87 kg and stood 167 centimetres tall. The GA patient is no longer on covid. Temperature is 98°F, pulse is 84 beats per minute, respiration is 16 beats per minute, GC is good, CNS is conscious. Blood pressure is 112/70 millimetres of mercury. It's common to have bowel and bladder habits. A patient is of average build and is considerably fat. During the physical examination, the patient's face was expressionless. He was well-informed on the day and location, and he was cooperative.

Dignotic assessment - He had all of his blood tests done, as well as a 2D Echo with an EF of 51% on May 31, an MRI on June 2, a cardiac call, and a random blood sugar level of 350 mg/dl. CRP 12.48 mg/dl, calcium 8.1 mg/dl, albumin 2.6 mg/dl, total billurubin 0.4 mg/dl, total billurubin 0.4 mg/dl, total billurubin 0.4 mg/dl, total billurubin 0.4 mg/dl, total billurubin 0.4 mg/dl, total billurubin 0.4 mg/ Sr Creatinine -0.4mg/dl, Urea -29mg/dl Sodium: 138 mmol/L, potassium: 4.3 mmol/L, haemoglobin: 10 gm%

Management

Medical management mucormycosis is treated with three important measures: 1) control of predisposing variables, 2) antifungal medication, and 3) surgical surgery. The patient's diabetic mallitus was closely watched by the physician, who prescribed antifungal medication (amphotericineB) and surgical intervention of the affected maxilla, which included the removal of all necrotic bone and soft tissue. It takes a detailed clinical radiographic examination, as well as histological confirmation backed by specific stains, to diagnose mucormycosis early, allowing for early and effective therapy.

Surgical management No surgical treatment is carried out. There's nothing significant here.

Nursing management The patient's medical history, both previous and present, was gathered. In addition, past treatment information was gathered. The results of the physical examination were evaluated.

Chart 1. Nursing diagnosis Acute discomfort in the maxilla due to tissue damage caused by a mucormycotic infection.

Nursing intervenstion	Rationale
1)Every two hours, the patient should be assessed to determine the source of his or her discomfort and to measure the pain scale.	1)To determine the severity of pain.
2)Create a quiet and relaxing atmosphere. Give the Betadine gargle according to the doctor's instructions.	2)To make the patient feel at ease
3)As directed by doctors, provide anti-inflammatory and analgesic medications.	3)In order to lower the risk of infection to lessen the discomfort

Follow up care - In case of emergency, the patient is encouraged to attend the hospital once a month. Tab Augmentine 625mg, Tab Paracetamols 500mg, Tab Pan 40mg, and Inj Tetanus Toxoid 0.5ml have been prescribed for him.

Betadine gargle, breathing exercises, and a deibetec diet were also recommended to the patient.

DiscussionWe spoke about a case report on mucormycotic osteomyelitis of the maxilla in this article. Mucormycotic infection is an opportunistic fungus caused by a group of saprophytic fungi. These creatures' spores are dispersed into the air by rotting matter. Inhalation is the primary method of infection. Uncontrolled diabetes mallitus, lymphomas leukaemia, renal failure, organ transplantation, long-term corticosteroid use, immunosuppressive medication, and AIDS are all risk conditions for mucormycotic infection. Iron has a vital function in the progression of mucermycosis.

Conclusion Osteomyelitis is the earliest documented illness, however mucormycotic Osteomyelitis is uncommon. Patients with diabetes and immunosuppression are more likely to develop this condition. It is important to take care in obtaining an accurate diagnosis through investigations such as histological and radiographic examinations. These investigations have confirmed whether Osteomyelitis is a fungal infection or not. This mucormycotic therapy is now being administered to my patient. In addition, additional medical care should be sought.

Reference

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