



Case Report

Copyright © All rights are reserved by Dr. Muhammad Athar Khan

Cerebral Infarction Following Tooth Extraction in Uncontrolled Diabetes Leading to Death

Dr. Muhammad Athar Khan*

Associate Professor Oral & Maxillofacial surgery, Bakhtawar Amin Medical & Dental College, Multan, Pakistan

***Corresponding author:** Dr. Muhammad Athar Khan, Associate Professor Oral & Maxillofacial surgery, Bakhtawar Amin Medical & Dental College, Multan, Pakistan.**Received Date:** August 07, 2024**Published Date:** August 14, 2024

Abstract

Dental extractions in uncontrolled diabetic patients results in a variety of complications ranging from macrovascular to microvascular and even can be life threatening. Extraction sockets heals poor when blood glucose levels are uncontrolled. The maximum permissible fasting blood glucose is 180mg/dl for elective procedure where the maximum random blood glucose is 234mg/dl for emergency dental extractions. There is limited data available about cerebral infarction leading to death in patients who got extraction in uncontrolled diabetes. Therefore, we report a case of 46 years old male who got dental extraction in uncontrolled diabetes which leads to cerebral ischemia, aphasia, ipsilateral paralysis and eventually to death.

Keywords: Cerebral infarction; Tooth extraction; Diabetes mellitus complication

Introduction

The most common endocrine disorder in dental patient is diabetes mellitus. Dental extractions in such patients can lead to delayed healing of extraction sockets due to high level of blood glucose level [1]. Control is therefore necessary to promote good healing and uneventful extraction.

For elective dental extraction in diabetics the cut-off point is 180mg/dl of glucose in blood before meal where cut-off point for emergency tooth extraction is 234mg/dl after meal. Hyperglycemia decrease the amount of nitric oxide leading to poor circulation of blood to brain and other parts of body [2].

We report a case of a 46-year-old male with uncontrolled diabetes who underwent a tooth extraction, which led to cerebral

infarction and death.

Case Report

A 46 years old male presented with a one day history of facial swelling of left side of face following tooth extraction of left maxillary first molar. According to the attendant he had pain on left side of face for which he seeks dental treatment from a nearby dental clinic where he extracted his first molar.

The patient condition was getting worse. He was a laborer with four children and unsatisfactory socioeconomic condition. He was a known diabetic and taking oral hypoglycemic agents. There was no history of hypertension, heart disease, kidney disease or any other condition.

Upon examination, the patient was febrile with a fever of 38 degree centigrade. His blood pressure was 100/65mmHg and a heart rate of 98bpm. There was mild swelling of left side of face. There was a lid ptosis of left side and absence of forehead wrinkles and dropping of the corner of mouth on left side while

in function (Figure 1). He was unable to hear and unable to speak since extraction of his molar the previous day. He was able to walk normally with no hemiplegia. Intraorally the extraction socket of left maxillary first molar was empty with fibrinous slough. The rest of physical examination was unremarkable.



Figure 1

The laboratory findings showed a high random blood glucose level of 337mg/dl and HbA1C of 14.2%. Rest of lab findings was missing.

CT scan of brain and face was requested which showed hypodense area at the left temporal area with no shifting of midline and normal ventricles showing cerebral infarction (Figure 2).

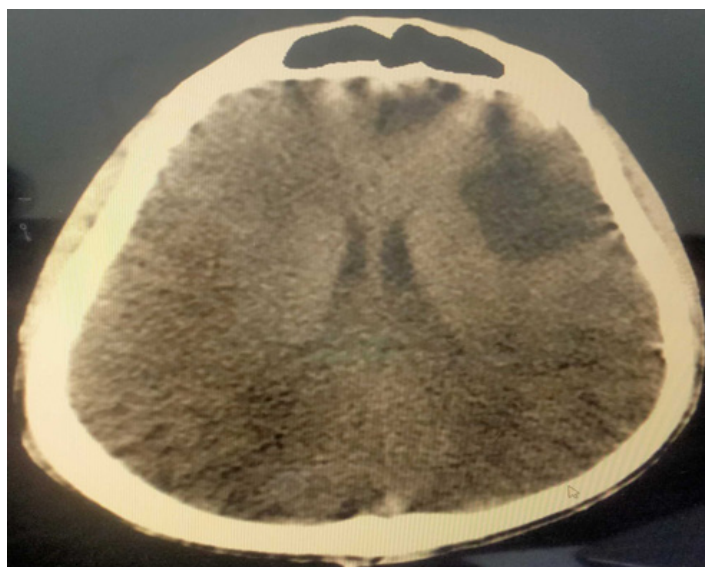


Figure 2

The molar socket was empty with no residual tooth fragments or foreign body. He was immediately referred and admitted to neurosurgery service, with consultation from diabetes control service for diabetes control. On 2nd post op day after extraction the patient expired despite of initiation of proper treatment.

Discussion

Diabetes mellitus is a metabolic disorder where either there is insulin deficiency or resistant to insulin leading to high blood glucose level. About 382 million peoples are affected from this disorder and the number continue to rise to 592 million people by the end 2035 worldwide [3].

Cardiac, cerebrovascular and renal disease are frequent in diabetes and may pose a risk to life particularly coronary artery occlusion, stroke and heart failure [4]. Diabetics are particularly susceptible to cerebral small vessel occlusion leading to poor outcome when it is associated with stroke [5]. Healing of wounds in diabetics are poor and particularly extraction sockets healed poor and susceptible to infections [6].

Safe blood glucose level for elective dental extraction is 180mg/dl (fasting blood sugar) and 234mg/dl for emergency tooth extraction (random blood glucose), attempting extractions beyond these levels leads to a variety of complications [2].

If patient develops paralysis of facial muscles or any motor nerve weakness after tooth extraction then patient should be immediately referred to neurosurgery care and likewise if chest pain then refer to cardiology service.

In conclusion when attempting dental extraction base line sugar should always be obtained, proper monitoring of blood sugar with physician consultation. Prophylactic antibiotics should be considered and any post op complication should be addressed immediately to avoid morbidity and mortality.

Acknowledgement

None.

Conflict of Interest

No Conflict of Interest.

References

1. Yang S, Li Y, Liu C, Wu Y, Wan Z, et al. (2022) Pathogenesis and treatment of wound healing in patients with diabetes after tooth extraction. *Front Endocrinol (Lausanne)* 13: 949535.
2. Gazal G (2020) Management of an emergency tooth extraction in diabetic patients on the dental chair. *Saudi Dent J* 32(1): 1-6.
3. Sen S, Chakraborty R (2015) Treatment and Diagnosis of Diabetes Mellitus and Its Complication: Advanced Approaches. *Mini Rev Med Chem* 15(14): 1132-133.
4. Schlienger JL (2013) Complications du diabète de type 2 [Type 2 diabetes complications]. *Presse Med* 42(5): 839-848.
5. Chen R, Ovbiagele B, Feng W (2016) Diabetes and Stroke: Epidemiology, Pathophysiology, Pharmaceuticals and Outcomes. *Am J Med Sci* 351(4): 380-386.
6. Gadicherla S, Smriti K, Roy S, Pentapati KC, Rajan J, et al. (2020) Comparison of Extraction Socket Healing in Non-Diabetic, Prediabetic, and Type 2 Diabetic Patients. *Clin Cosmet Investig Dent* 12:291-296.