Chronic Maxillary Sinusitis Complicated by Right Orbital Abscess with Ruptured Globe Following Tooth Extraction: A Case Report

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OBJECTIVE: This article reports a case of a chronic maxillary sinusitis complicated by right orbital abscess with ruptured globe following tooth extraction in a 70-year-old female diabetic patient 4 weeks after forceps extraction of the upper right 1stpremolar. he prevalence of maxillary sinusitis in United State of America ranges from 13% to 17% 11while the reported prevalence in Europe is 10.9%. In Nigeria, the prevalence of chronic maxillary Sinusitis is about 7.3%. Mehraand Jeong reported that odontogenic etiology accounted for 10-12% of cases of maxillary sinusitis. Maxillary sinusitis could occur in individuals without an underlying dental condition or it could be present in individuals with an underlying recognizable dental condition as in periapical cyst or oroantral communication.8,9Maxillary sinusitis affects the pseudostratified columnar epithelium lined mucosa of the maxillary antrum. Literature review did not reveal any report of maxillary sinusitiscomplicated by right orbital abscess with ruptured globe following tooth extraction of a single tooth in patients. This article hereby reports a case of maxillary sinusitis complicated by right orbital abscess with ruptured globe following tooth extraction of a single tooth in patients.

Case Description: Patient gave a history that prior to the tooth extraction, there was a carious cavity on the tooth, pain on mastication with background nasal congestion and postnasal drip of over one year duration. 4 weeks following extraction, there was marked right buccal and periorbital swelling. Examination by the ophthalmologist revealed rupture of the right globe with copious pus discharge from the lower eyelid of the right eye. Examination by the dental team and the Head and Neck Surgeon revealed the presence of oroantral communication with pus discharge from the oroantral fistula and the retropharyngeal area. Fasting Blood Sugar on presentation was 278mg/dl. Patient was referred to the physician for optimization of her blood sugar level. Evisceration of the right eye was carried out along with incision and drainage of the right eyelid and buccal space. Intravenous ceftriaxone 1g daily, intravenous metronidazole 500mg 8 hourly, intramuscular genticin 80mg 8 hourly, eusol A&B dressing twice daily, paracetamol per oral 1g 8 hourly, menthol crystals steam inhalation twice daily, Diazepam 5mg nocte were prescribed for the patient. Inferior meatal antrostomy with antral washout was carried out by the Head and Neck Surgeon 2 weeks after. Following surgery, patient was placed on per oral Tavanic 500mg once daily, metronidazole 400mg 8 hourly, vitamin c 100mg 8hrly, guaifenesin/ pseudoephedrine 25mg nocte, diclofenac potassium 50mg twice daily and menthol crystals steam inhalation twice daily. Review of the patient four weeks after surgery showed marked improvement in the clinical parameters of the patient, disappearance of swelling and cessation of pus from all points of previous discharge.

DISCUSSION: Chronic maxillary sinusitis is thought to occur due to one or more host or environmental factors1. The authors have reported maxillary sinusitis of dental origin. Roots of the upper 1stpremolar, upper 2ndpremolar, upper 1st molar, upper 2ndmolar and upper 3rdmolar sometimes project into the maxillary sinus, depending on their sizes. Forceps extraction of these teeth, when required, can lead to a tear in the mucosa of the maxillary antrum which may heal spontaneously or lead to oroantral communication that may or may not be a predisposing factor for maxillary sinusitis. Pain from background chronic maxillary sinusitis can radiate to the upper teeth which may cause the dentist to erroneously extract the teeth. Such extractions may lead to oroantral communication, and even exacerbation of the sinusitis. We hypothesize that the patient could have had chronic maxillary sinusitis prior to her presentation to the dental practitioner. The oroantral communication that followed the extraction of the tooth in this patient led to an exacerbation of the sinusitis. Diabetes has been known to increase the susceptibility to infection on account of reduced immunity and hyperglycaemic environment which favors the growth of bacteria. Chronic maxillary sinusitis can therefore become secondarily infected in the presence of elevated blood sugar level that characterizes Diabetes. The superimposed infection of the sinusitis could lead to retrograde spread to the periorbital region with consequent rupture of the globe of the eye, since the roof of the sinus is the floor of the orbit. In this reported case, the patient is a known diabetic patient that is non-compliant with her medication. The fact that the patient is an uncontrolled diabetic patient contributed to the onset and spread of the infection from the maxillary antrum to the periorbital region. The failure of the dental practitioner to establish whether or not the patient had inflamed sinus or even determine the relationship of the roots of the tooth to the sinus prior to extraction may have led to the oroantral communication. In this reported case, the extraction was carried out in a private dental clinic where the expertise of the practitioner could not be ascertained. Oroantral communication, bacterial infection and defects of the immune systems are among cited possible etiologic factors for chronic maxillary sinusitis in the literature.

CONCLUSION: Chronic maxillary sinusitis complicated by right orbital abscess with ruptured globe following tooth extraction may be considered a potential complication of forceps extraction of maxillary premolars and molars especially in a medically compromised patient. The authors hereby recommend (1) ensuring adequate medical and dental evaluation of patients before forceps extraction (2) all medically compromised patients must be optimized before forceps extraction (3) The need for multidisciplinary management of medically compromised patients with dental diseases