ORIGINAL ARTICLE

Otolaryngological manifestations of Diabetes mellitus

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ABSTRACT

The otolaryngological complications of diabetes mellitus are well known and come across usually during clinical practice often. This study was done to verify the existence of such complications and moreover to compare the results of the study with synonymous studies done in other parts of the world by other authors. As per our study we found that almost all ENT inflammatory disorders were found to have increased incidence in diabetics. These included bacterial fungal and viral inflammations. Peripheral neuropathies are well known relationship of diabetes but central lesions causing Hearing loss, numbness ,vertigo and neuralgias were also found to have increased in diabetics. The results of this study were well in line with the results of other studies and testify that diabetes definitely increases the risk of getting more complications in head and neck area .the commonest complication was otomycosis(19.33%) while among the rare ones(1.33% each) were trigeminal neuralgia, facial paralysis, mucormycosis and septal abscess.

Keywords diabetes mellitus, hearing loss, mucormycosis

INTRODUCTION

Diabetes is a systemic disease involving all the body Systems. ENT& Head and neck area is no exception. We decided to conduct a prospective study of the patients presenting through outpatients in ENT department.

MATERIALS AND METHODS

This study was conducted in one hundred Patients who presented with ENT Manifestations and had diabetes mellitus as concomitant disease. The study was carried out at Arif Memorial teaching hospital and Hameed Latif Hospital over a period of two years from Jan 2016 to December 2017.Most of the cases were taking oral hypoglycaemic (90%) and fewer (10%) were on insulin. Majority (79%) of the cases fell in the age group from thirty to sixty years. All the patients in a sequence were included in the study that had clear clinical picture and relevant signs of the ENT disease .The cases that were borderline l or were not proven on further investigation were excluded. the treatment modalities adopted depended upon the area of involvement .the cases of otomycosis were treated by topical antifungal agents which included clotrimazole lotion used twice a day for a period of two months combined with regular suction clearance twice weekly. The complicated cases having otitis externa in addition to mycosis were additionally given oral antibiotics .Malignant otitis externa cases were treated with ciprofloxacin in higher doses of 500mg to 1 gm twice a day till full recovery /for one month depending upon clinical improvement in the form of reduction in pain and discharge .Nystatin oral solution in was used in cases of oral candidiasis .perichondritis of pinna is another infection predominantly caused by pseudomonas aeroginosa and was treated by injectable quinolone ciprofloxacin in dosage of 200 mg to 400 mg twice a day depending upon body weight of the patient.

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RESULTS

The age distribution among the cases was as under:

Age group (n=150)

Age in years	n	Percentage
10 – 20	3	2
21 – 30	15	10
31 -40	21	14
41 – 50	31	20.6
51 -60	20	13.3
61 -70	7	4.6
70+	3	2

Clinical Manifestations Revealed (n=150)

Disease	n	%age
Otomycosis	29	19.3
malignant otitis externa	12	8
Sinusitis	11	7.3
boil ear	11	7.3
Hearing Loss	7	4.6
pharyngitis	6	4%
Oral candidiasis	6	4
boil nose	5	3.3
perichondritis pinna	5	3.3
Septal Abscess	2	1.3
Facial paralysis	2	1.3
Sino nasalMucormycosis	2	1.3
Trigeminal neuralgia	2	1.3

DISCUSSION

We had conducted this study to determine patient trends in our society. There are studies available indicating higher rate of involvement of different organ systems in diabetics. Olga N. et al[2], concluded that both types of diabetes accelerate different aspects of age related hearing changes in middle age mice, which may serve as valuable models to probe underling metabolic alterations and discover the anatomical and neurochemical pathologies of diabetes that negatively impact auditory and sensory processing. so through their study they have proven that diabetes has negative impact on a patients hearing capability .Sensorieural Hearing loss in humans is another complication of diabetes mellitus. It's an established fact

that diabetes mellitus causes peripheral neuritis leading to numbness in feet which is an important starting event of Dior diabetic foot. Beside peripheral k2neuritis diabetes also promotes central neuritis which can involve any cranial nerve including vestibulocochlear nerve leading to hearing loss and sometimes associated with vertigo also. In our study we picked seven(4.6%) cases of sensorineural hearing loss In diabetics. Fungal infections involving the paranasal sinuses is a notorious complication for causing increased risk of intracranial complications and facial disfigurement in diabetics world over .Matthew P fahrenkopf et el 2016[1] described in a case study of a diabetic patient who was already complicated with ketoacidosis having Lt. sided facial pain and dirty discharge from same side of nose and had mucosal thickening and fluid levels in ipsilateral maxillary ,ethmoid and sphenoid sinuses .In our study 2(1.33%) patients suffering from mucormycosis of the paranasal sinuses. GenR1 et el[4] 2013 reported two cases of fatal rhino- orbito-cerebral mucormycosis with amblyopia in patients with diabetes having ketoacidosis also. During our study we had picked up two cases (1.33%) of mucormycosis. One patient had Rt. sided pansinusitis with nasal crusting, headache, Rt. ophthalmoplegia and loss of vision due to orbital apex involvement. Moreover the said patient had malar oedema and necrotic hard palatal mucosa with bare hard palate ipsilaterally. Both patients were treated with Amphotericin B intravenously combined with daily nasal toilet for removal of pus and tissue crusts. Both patients were on oral hypoglycaemic with poor blood sugar control .During treatment both patients were shifted to Insulin for better control of diabetes. Bahall M1 et el[5] 2017 reported a case of Lemierre's syndrome in Caribbean who had diabetes mellitus with ketoacidosis and presented to them with severe pharyngeal sepsis. The said patient also had internal jugular vein thrombosis and severe respiratory difficulty leading to failure. They had managed the case with loading doses of intravenous antibiotics and ventilator support. In our study we came across 6(4%) cases of pharyngeal involvement that had odynophagia, high grade fever and prostration. These patients on clinical examination showed severely congested pharynx with follicles over the tonsils and tender upper jugular lymph nodes. All of these six cases did not respond to oral antibiotics and were managed with intravenous antibiotics in loading doses. However, none of our patients needed ventilator support. The odynophagia in these patients settled in 3-4 days while tenderness in the lymph nodes started reducing from 7th day onwards. All these patients were previously taking oral hypoglycaemic and were shifted to insulin during hospital stay for better control of diabetes. We did not come across full fledge picture of limier syndrome but the pharyngeal involvement was deeply felt to be advancing on the same track which probably did not develop because of early detection and timely introduction of intravenous antibiotics. Alexandre et el[6] 2017 reported a case of Group A Streptococcal Bacteraemia following pharyngitis in a diabetic patient of 76 years of age with the conclusion that the risk of such complications is increased in diabetics at advanced age. In our study three (2%) patients had bacteraemia with high grade fever and chills. Fortunately, all of these patients responded well to intravenous cefuroxime at the dosage of 50mg per kilogram body weight.

Steven SM1 et el[7] 2015 reported 28 cases of malignant malignant otitis externa. They divided the patients into two groups according to the severity of disease, duration of antibiotic course and disease outcome. They had reported 4(14%) out of 28 patients dying of disease related complications. In our study we came across 12(8%) having malignant otitis externa out of 150 patients. All of these patients were treated with intravenous ciprofloxacin and aural toilet once a day. Three patients (2%) had severe otomastoiditis with facial palsy. They were subjected to cortical mastoidectomy for debridement and drainage purposes. Two of the patients recovered from facial palsy. One patient ended up with permanent facial palsy. None of the patient died of disease related complication.

CONCLUSION

Diabetes mellitus increases the risk of having complications in all areas of head and neck including ear, nose and throat. All the patients included in study were having treatment for diabetes. Majority of the patients having complications were on oral hypoglycaemic. Fungal infection of paranasal sinuses and including mucormycosis and malignant otitis externa needed longest period of treatment and were found to be most difficult to manage.

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