

# Otomycosis - A Management Challenge In Calabar, South-South Nigeria

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## Citation

R Mgbe, A Umana, A Adekanye, M Offiong. *Otomycosis - A Management Challenge In Calabar, South-South Nigeria*. The Internet Journal of Third World Medicine. 2010 Volume 9 Number 2.

## Abstract

Otomycosis is a common clinical problem in our region of sub Saharan African because of the hot, humid, dusty and wet climate of this region. The infection can be diagnosed clinically on the basis of symptoms like pruritus, otalgia, discharge, blockage, hearing loss and presence of murky debris resembling wet newspaper in the external auditory meatus. It is commoner in females and occurs more in the 21-30 year age range. The most common symptoms in our review were pruritus followed by hearing loss, Murky otorrhoea and blockage. Otomycosis was predominantly unilateral with both ears almost equally affected. Our study highlights a management challenge in the treatment of otomycosis in Calabar, South-South Nigeria. The species of fungus causing the disease in our center could not be established because of poor access to mycological facilities. However, cure rates following antifungal treatment was high (86%) even in the absence of mycological identification of causative fungal agent. Drugs like Clotrimazole/flumethasone (eardrops/cream), Beclomethasone dipropionate/clotrimazole/lidocaine hydrochloride (eardrops) or Gentian violet are indispensable topical agents in the management of otomycosis in the Third World. Gentian violet should only be used as treatment of last resort because it discolors the external auditory canal giving a poor cosmetic appearance during treatment. Although confirmatory test to identify causative fungal agent is important, in the absence of adequate mycological diagnostic facilities, presumptive clinical diagnosis and treatment based on signs and symptoms has a high (86%) cure rate.

## INTRODUCTION

Otomycosis is a fungal infection of the external auditory meatus. The common aetiological agents include the *Aspergillus* species; *A fumigatus*, *A niger* and the *Candida* species; *Candida albicans*. Other fungi involved are, *Penicillium*, *Pityrosporum*.<sup>1, 2, 3</sup>

Otomycosis has a worldwide distribution but it is more common in warm, wet, humid and dusty environments, hence its prevalence in Sub Saharan Africa.<sup>1,2,4,5</sup>

The disease is said to be commoner on those who wear head covers in some parts of the World.<sup>5</sup> It is also common among swimmers hence sometimes called "swimmers ear".

Affected individuals range in age from 6months to 84 years with a peak between 15 to 30 years. Sex distribution is not well established but some workers have said that there is a female preponderance<sup>2, 6, 7</sup>

Otomycosis is considered not to be highly infectious because it is often unilateral and shows no preference for either side.<sup>8</sup>

Symptoms usually include: pruritus, otalgia, otorrhoea, ear blockage, hearing loss and tinnitus.<sup>9, 10, 11</sup>

Examination usually reveals the presence of murky debris ranging in colour from white to black resembling "wet newspaper" in the external auditory meatus.

Diagnosis is usually clinical with mycologic studies to confirm the particular species of causative fungi.

Treatment is by suction clearance or aural syringing followed by topical anti fungal agents.

Calabar, South-South Nigeria is in Sub-Saharan Africa therefore otomycosis is expected to be a common clinical problem. However there has been no previous report from our centre or region characterizing the disease. Therefore, there is a need for this initial retrospective review to set a premise for a prospective study to establish a detail epidemiologic data on the disease pattern in our region.

## PATIENTS AND METHODS

This retrospective study was carried out at the Otorhinolaryngology (ORL) department, University of

Calabar Teaching Hospital, Calabar, South-South Nigeria. This is a tertiary health institution catering for about 18 local council areas with General Hospitals, Health centre and Private clinics. Referrals from neighbouring states and countries also come to this centre.

The period under review was January 2004 to June 2010. Clinic records of patients seen within this period with a history of ear complaints were reviewed for age, sex, clinical symptoms, duration of symptoms, previous medications and treatment given.

The diagnosis of otomycosis was based on clinical history and otoscopic examination. The clinical symptoms of pruritus, otalgia, ear blockage, hearing loss, and murky discharge in the ear canal were regarded as clinical diagnostic of otomycosis.

Treatment was by one of two methods; Patients with suspected perforation of the tympanic membrane had aural toileting or suction clearance followed by topical application of antifungal agents.

Those with intact tympanic membranes had aural syringing followed by topical antifungal agents.

Topical antifungal agents used were either; Clotrimazole/fluomethasone- (Locacorten vioform eardrops/cream) or Beclomethasone dipropionate/clotrimazole/lidocaine hydrochloride- (Candibiotic eardrops) or Gentian violet.

After toileting or syringing, the ears were packed with a wick impregnated with either of these agent and changed alternate daily thrice. Thereafter, patients continue with thrice daily topical application of the drops for two weeks. Resolution of the symptoms and signs was taken as cure. Recurrence was suspected if symptoms recurred within six weeks. Recurrence was treated by repeat treatment with above regime and furthermore with Gentian violet for persistent cases.

## RESULTS

In the period under review, 17,160 patients were attended to in the outpatient ORL clinic. Of these, 3780(27.9%) had ear complaints. 338(8.9%) of those with ear complaints had a clinical diagnosis of otomycosis. These were made up of 138 males and 200 females giving a male to female ratio of 1.4:2. Their ages ranged from 2months to 84years with a mean of 42.5years while peak age was 21 to 30years. Table I

Ear symptoms suggestive of otomycosis were; Pruritus (86.9%), Otalgia (63.6%), Hearing loss (50.3%), Murky ear discharge (51.5%), Blockage (37.8%), and Tinnitus (8.9%). Table II

Of the 338 patients, unilateral left ear affection was 146(43.2%), unilateral right ear affection was 137(40.5%), and bilateral affection was 55patients (16.3%). See Table. III

Success rates following routine presumptive treatment were: Locacorten vioform (89.5%), Candibiotic eardrops (90%), Gentian violet (87.5%), while Repeat treatment (77%).

Treatment was repeated in 35 patients who had recurrent infection. Of these, 27(77.1%) had cure while symptoms persisted in 8 (22.9%). The patients with persistent symptoms were treated by topical painting of ear canal with Gentian violet with success in 7 (87.5%). One patient was lost to follow up. Table IV

### Figure 1

TABLE I: Age distribution of patients (n=338)

AGE IN YEARS	NO	MALE	FEMALE	%
0-10	63	25	38	18.6
11-20	44	10	34	13.0
21-30	112	43	69	33.1
31-40	49	20	29	14.5
41-50	30	15	15	8.9
51-60	22	16	6	6.5
>60	18	9	9	5.3
TOTAL	338	138	200	100

### Figure 2

TABLE II: Common signs and symptoms of otomycosis

SYMPTOM	NO (N=338)	%
Hearing loss	170	50.3
Otalgia	216	63.6
Pruritus	294	86.9
Murky Otorrhoea	174	51.5
Tinnitus	30	8.9
Blockage	104	30.8

**Figure 3**

TABLE III: Ear distribution of otomycosis

EAR	AFFECTED	%
Left Ear	146	43.2
Right Ear	137	40.5
Bilateral	55	16.3
TOTAL	338	100

**Figure 4**

TABLE IV: Effectiveness of presumptive clinical diagnosis and treatment

DRUG TYPE	NO. PF PATIENTS ADMINISTERED	CURE	RECURRENCE	% SUCCESS
Locacerten vioform drops/cream	188	168	20	89.4
Candibiotic drops	150	135	15	90.0
Repeat treatment	35	27	8	77.1
Gentian violet	8	7	1	87.5

## DISCUSSION

Otomycosis is a common clinical problem in our region of sub Saharan African. This is not surprising because of the hot humid, dusty and wet climate of the region.<sup>1,4,5</sup>

According to Paulose et al otomycosis occurs more in those who wear head covers in certain parts of the world.<sup>5</sup> Head covers increase moisture and heat and humidity around the ears.

Our diagnosis and treatment was presumptive based on clinical symptoms and signs including pruritus, otalgia, blockage hearing loss and presence of murky debris resembling wet newspaper in the external auditory meatus. This agree with literature reports that the infection can be diagnosed clinically on the basis of symptoms<sup>1,4,5</sup>

Otomycosis was commoner in females. This corroborates reports by Pontes et al<sup>2</sup>, Ali Zerei et al<sup>3</sup>, and Ibekwe et al<sup>6</sup> but contrast a study by Tang Ho who had more males than females.<sup>4</sup> The differences may be due to the different settings of the studies and sample sizes. Ali Zerei et al's study had only 15 participants; Ibekwe et al studied 387 and Pontes et al 103 patients while Tan Ho et al reviewed 132 cases.

In our study, the highest number of cases of otomycosis occurred in the 21-30 year age range similar to the findings of Ravinda Kaur et al in which otomycosis was more prevalent between the ages of 16-30 years.<sup>1</sup> These age groups do more swimming and physical exercises which predisposed them to otomycosis. Our region is a coastal region hence swimming activity may also be a contributing factor.

In our review, otomycosis was predominantly unilateral with both ears almost equally affected. This agrees with many studies reporting that otomycosis is usually unilateral.<sup>1,3,7</sup>

The most common symptoms in our review were pruritus followed by hearing loss and blockage due to murky debris. Different studies have shown variations in the most common symptoms. Otalgia and blockage<sup>1,4</sup>, discharge<sup>3</sup>, itching<sup>5</sup> and otalgia.<sup>8</sup>

Our study highlights a management challenge of otomycosis in Calabar, South-South Nigeria. The species of fungus causing the disease in our setting could not be determined because of poor access to mycological facilities. However, cure rates following antifungal treatment was high (86%) in the absence of mycological identification of causative fungal agent. Therefore, drugs like Clotrimazole/flumethasone eardrops/cream, Beclomethasone dipropionate/clotrimazole/lidocaine hydrochloride eardrops or Gentian violet solution are indispensable topical agents in the management of otomycosis in the Third World. Gentian violet though very effective as an antifungal agent should be used as treatment of last resort because it discolors the external auditory canal giving a poor cosmetic outlook.

In conclusion, although confirmatory test to identify causative fungal agent is important, however, in the absence of adequate mycological diagnostic facilities presumptive clinical diagnosis and treatment of otomycosis based signs and symptoms has a good cure rate. However, there is the need to upgrade the mycological facilities available in Calabar, Nigeria. This is necessary for detailed aetiological evaluation of otomycosis in our region

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