

THE CONTINUING CHALLENGE OF EARLY DETECTION OF ACUTE OTITIS MEDIA IN CHILDREN

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SUMMARY

Objective: *The aim of the study is to highlight the clinical problem of acute otitis media in children as seen in Uyo with particular reference to difficulties of early detection over a 6 year period (1999-2004).*

Methodology: *A six-year retrospective study (1999-2004) was carried out to evaluate the clinical presentation and early detection of acute otitis media in children. Case-notes of all children aged 2 weeks to 3 years who presented with ear aches and/or ear discharge of not more than 7 days were reviewed noting the symptoms that preceded the ear discharge and the treatment offered prior to presentation at the ENT Clinic.*

Results: *A total of 273 children within the age range under review were seen with acute otitis media. 48.4% (132) were males and 51.6% (141) were females giving a M:F ratio of 1:1.2. Majority of the mothers (92%) actually reported to physicians while the rest (7.7%) visited chemists due to the early fever. All the mothers admitted to treating the children for malaria.*

Conclusion: *Many clinicians consulted by children with febrile conditions miss the diagnosis of acute otitis media in the pre-otorrhoea phase. Most of such children are first treated for malaria while the ear is left to progress to discharge before attention is paid to it. The need to ensure complete examination of every febrile child, including otoscopy is highlighted. The importance of providing adequate facilities such as otoscopes in every consulting clinic cannot be over-emphasized. It will reduce the incidence of discharging ears with its attendant short and long term dangers in children.*

Key Words: *Acute Otitis Media, Children, Early Detection.*

INTRODUCTION:

Acute Otitis Media (AOM) represents the rapid onset of an inflammatory process of the middle ear space associated with one or more local or systemic signs. This usually includes otalgia, fever, irritability, anorexia, vomiting, diarrhoea and lately Otorrhoea¹. Acute Otitis Media affects at least 80% of children younger than age 2 years². It is said to account for at least 3 million visits to US family Physicians per year³.

The eustachian tube is the chief route by which infection reaches the middle ear. The cause of infection in such cases is located in the nasopharyngeal and in children this usually means enlarged adenoids. Secretions from the nasopharynx can easily pass through the usually short, horizontal, patent Eustachian tube in children, introducing pathogens into the middle ear.

The diagnosis of AOM in the pre-otorrhea phase is not easy and presents special difficulties in infants and young children. There is a significant variability in the ability of primary care physicians to diagnose it⁴. Before otorrhoea develops, there is hardly any direct sign to the ear in some children. The child is simply unwell and has a high temperature. This is the trap that many clinicians in the tropics, who think mostly of malaria as the commonest cause of fever, are caught in. When perforation of the ear drum has taken place, and there is otorrhea, diagnosis is usually obvious. This is when most of the patients were referred to the Ear, Nose and Throat (ENT) Clinics. There is a risk that the acute infection and perforation may lead to a chronic discharging ear with potential complications. This is not only preventable but undesirable hence this communication.

MATERIALS AND METHOD

This is a retrospective study of all children aged 2 weeks to 3 years who presented with earache and ear discharge of not more than 7 days at the ENT Clinic of the University of Uyo Teaching Hospital (formerly Federal Medical Centre), Uyo over a six year period (1999-

2004), history of pre-otorrhoea symptoms and treatment prior to presentation were obtained from the parents. The patients were otologically examined at the ENT Clinic which receives referrals from other Hospitals and Clinics in Uyo as well as other General Hospitals in Akwa Ibom State.

Children above 3 years, who are normally able to indicate early otalgia, were excluded from this study. Children who had otorrhoea of more than 7 days were also excluded. Other information obtained on each eligible child included age, gender and duration of illness prior to recruitment.

TABLE 1: Pre-otorrhoea Symptoms, Duration and Numbers n- 273

SYMPTOM / SIGN	DURATION (days)	NUMBER	PERCE NTAGE
Fever	3-10	267	97.8%
General Malaise & irritability	2-6	259	94.9%
Catarrh & Cough	2-8	246	90.1%
Otalgia	2-3	146	53.5%
Pulling of the Ear	3-7	118	43.2%
Vomiting	1-2	87	31.9%
Diarrhea	1-4	64	23.4%
Abdominal Pains	2-5	59	21.6%

RESULTS

A total of 273 children who met the inclusion criteria were examined in the 6 years study period. Of these 122 (44.7%) were aged below 1 year while those above 1 year were 151 (55.3%). There were 132 (48.4%) males and 141 (51.6%) females giving a M:F ratio of 1:1.2. Most of the cases were unilateral 262 (96%) while only 11 (4%) had bilateral ear involvement.

A total of 256 (93.8%) had received anti-malarial treatment prior to noticing ear discharge. All the mothers ascribed the ear discharge to the treatment.

The pre-otorrhoea symptoms and their durations reported by the mothers were as shown in Table 1.

DISCUSSION

AOM was known to be highly prevalent in the developed countries of Europe and America⁵; but early efforts by Okeowo⁶ in Lagos to establish a data base for Nigeria gave an incidence rate of 21% to 28%. He implicated under-diagnosis among other factors for the paucity of accurate data. Okafor also observed that the incidence of AOM was low because of late presentation to Hospitals.⁷ By the time they present, the disease had progressed to the chronic suppurative variety. A study in Western Nigeria (Ilesha) gave a prevalence rate of 28% in an under-five study population with a temperature of 37.8oC and above and were found to have clinically acute otitis media^{8,9}. The diagnosis was made possible and defined by otoscopy which showed the presence of a red tympanic membrane with or without otorrhoea.

The highlight of this study is that early diagnosis of AOM in children, particularly the very young is a challenge to most medical practitioners. This is made worse when the practitioner is unsuspecting. What then are the diagnostic criteria? According to Karma et al⁵ for the clinical diagnosis of AOM, both ear-related symptoms and signs of middle ear fluid must be present. Acute symptoms must include at least one of the following: ear-ache (otalgia), tugging at the ear, fever, irritability, restless sleep, loss of appetite (anorexia), other simultaneous respiratory tract infection, or concurrent gastrointestinal symptoms. Any child with the above symptoms must arouse in any clinician the need to examine the ear (otoscopy) or preferably pneumatic otoscopy.

In this study, 97.8% of the children had fever while 94.9% presented with general irritability

before the otorrhoea phase. Tugging (pulling) at the ear was reported in 43.2% of cases before going on to develop otorrhoea. Lack of facility for otoscopy could be the only excuse for missing the diagnosis of this group. Outright complaint of otalgia (ear-ache) accounted for 53.5% and was reported mostly by those children aged 2 years and above who were old enough to learn speech and could complain. It was not surprising that many of the children (90.1%) also had symptoms of upper respiratory tract infections viz cough and catarrh. This is not unconnected with inflammation of the tonsils and adenoids since adenoiditis is one of the predisposing factors for AOM¹⁰.

The mistake that is still recurrent today was that every child with pyrexia, especially in the rural settings, was treated with anti-malarials only with the assumption that pyrexia must be due to malaria until proven otherwise. It was reported that when chloroquine and other cheaper drugs were highly effective, the treatment of malaria based on symptoms alone was widely seen to be cost-effective¹¹. In this study, 93.8% of the children were treated for malaria prior to development of otorrhoea. Indeed the mothers of these groups of children blamed the anti-malarial treatment earlier given as the cause of the ear discharge.

Any child with an undiagnosed fever must have the ear examined. The diagnosis of pyrexia of unknown origin (PUO) should not be an escape route. Any paediatric or general consulting clinic without an otoscope is incomplete. Perhaps general practitioners and Paediatricians need some update re-orientation in performing simple otoscopy. Redness of the eardrum, though not singly diagnostic of AOM, should not be missed. When present in association with any of the diagnostic criteria or symptoms it becomes diagnostic. Bulging of the eardrum is often suggestive. Mobility of the tympanic membrane demonstrated with pneumatic otoscopy takes skill to elicit. It is

impaired when there is fluid in the middle ear².

In conclusion, while malaria remains far more prevalent in the tropics¹¹, a high index of suspicion must be kept for AOM in children aged below 3 years who present with pyrexia or undefined general irritability. It is inexcusable to ignore signals of ear pains in a child. It is cost-effective to examine the ear to treat early and prevent deafness with the social stigma later in life.

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