International Journal of Otorhinolaryngology
2025, Vol. 11, No. 2, pp. 53–58
https://doi.org/10.11648/j.ijo.20251102.20

Research Article

Epidemioclinical Aspect of Otorhinolaryngology Pathologies in Children Aged 0 to 15 Years at the Mother-child University Hospital of N'Djamena

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Abstract

Introduction: ENT pathologies are all diseases in the ENT sphere, in developing countries, such as Chad, due to poverty and promiscuity; ENT diseases therefore remain a real public health problem. The aim of this work was to identify the epidemio-clinical aspects of ENT diseases in children and to analyse primary prevention measures. Method and material: this is a prospective descriptive study carried out in the ENT-HNS department of the mother and children hospital of N'Djamena (Tchad) from January 1, 2024 to June 30, 2024. All patients received in ENT consultations aged 0 to 15 years were included. Results: We were able to collect 328 cases dominated by boys, 181 cases (55.2%) against 147 girls (44.8%) with a sex ratio of 1.23 in favor of boys. Children under 5 years of age were the most represented, 195 cases or 59.5%; 215 cases or 65.5% were up to date with vaccination against 113 cases or 34.5% not up to date with vaccination. The oral-pharyngo-laryngeal region was affected in 44.2% followed by the nasosinusal, cervical and atrial regions which respectively accounted for 20.2%; 18,7%; and 17.1%. Odynophagia was the most common reason for consultation, with 96 cases (29.3%); The most common condition was tonsillitis, which accounted for 95 cases (29.0%). Infections and/or inflammations accounted for 280 cases, or 85.4%. Conclusion: ENT pathologies in children are frequent in consultations, they are dominated by infections and or inflammation. Simple preventive measures could help reduce their incidence, in particular rigorous monitoring of the vaccination schedule and raising awareness among parents and other public actors of the population on the rules of children's lifestyle.

Keywords

Pathology, Otorhinolaryngology, Epidemioclinical

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Received: 27 November 2025; **Accepted:** 15 December 2025; **Published:** 31 December 2025

1. Introduction

ENT pathologies are all diseases in the ENT sphere, they can be malformed, tumorous, traumatic or infectious. Infections in this region are the leading cause of consultation in children and the leading cause of antibiotic prescription [1-3]. The pathologies frequently encountered are nasopharyngitis, tonsillitis, ear infections, etc. [3] In developing countries, such as Chad, due to poverty and promiscuity, ENT diseases remain a real public health problem [3, 4]. The high cost of treatment and the low access to care in our countryside demonstrate the need to strengthen the prevention of pathologies. Paradoxically, few previous studies have been published on preventive measures, particularly in the field of ENT. The aim of this work was to identify the epidemio-clinical aspects of ENT diseases in children and to analyse primary prevention measures.

2. Materials and Methods

This was a cross-sectional study with a descriptive and analytical purpose covering the period from January 1, 2024 to June 30, 2024 carried out in the ENT and HNS department of the MCUH of N'Djamena. Recruitment was prospective and involved all children aged 0 to 15 years who received an ENT consultation during the study period. All children over the age of 15 at the time of the study were excluded. A pre-established survey form was used for data collection. The variables collected were epidemiological and clinical: age, sex, vaccination status, reason for consultation, diagnosis. These data were analyzed using SPSS 20 software and graphs by Excel 2019.

3. Results

1) Demographics:

Frequency:

During the six months of the study, 462 patients were seen in an ENT consultation at the MCUH in N'Djamena, 328 of whom were children. This represented 71% of all consultants (Figure 1).

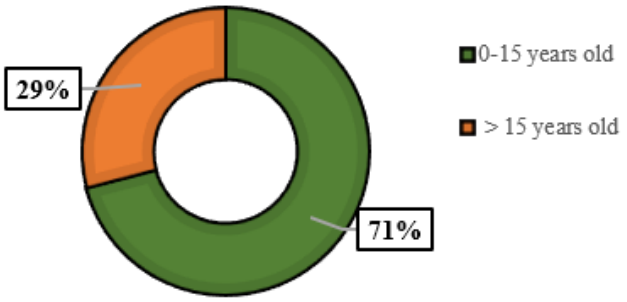

Figure 1. *Frequency of Children in the ENT Department.*

Age and gender:

The 0 to 5 age group represented 59.5% or 195 cases.

Boys and girls accounted for 181 (55.2%) and 147 (44.8%) respectively, a sex ratio of 1.23 (Figure 2).

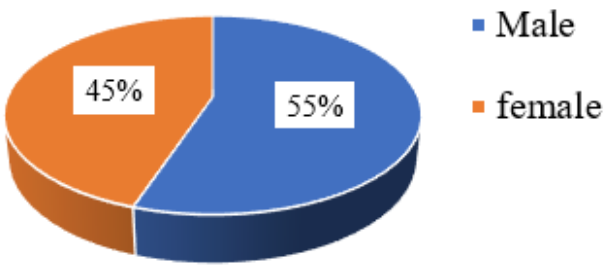

Figure 2. *Distribution of the Patients By Sex.*

2) Clinical data

Vaccination status:

According to Chad's expanded programme on immunization schedule, 215 children (65.5%) had an up-to-date vaccination schedule.

In 113 children (34.5%), the vaccination schedule was not up to date.

Reason for consultation:

Odynophagia was the most reported reason for consultation with 95 cases (Table 1).

Table 1. *Distribution of Patients by Reason for Consultation.*

Reasons for consultation	Staff	%
Odynophagia	96	29,3
Cervical swelling	60	18,3
Snore	48	14,6
Rhinorrhea	39	11,9
Otalgia	35	10,7
Nasal obstruction	17	5,2
Sneezing	12	3,7
Otorrhea	11	3,4
Hearing loss	10	3,0
Total	328	100,0

Topographic diagnosis

The oral-pharyngolaryngeal region was the most affected (n=145 or 44.2%). It was followed respectively by the naso-sinus region (n= 68 or 20.7%), the cervicofacial region

(n= (59 or 18.0%) and the atrial region (n= 56 or 17.1%), respectively.

Diagnosis according to the nosological groups:

Infectious and inflammatory pathologies were predominant (280 cases or 85.4%). (Table 2).

Table 2. *Distribution By Nosological Groups and Regions Concerned.*

	Regions				
Pathologies	**Bucco-pharyngolaryngeal**	**Naso-snusian**	**Head and neck**	**Little finger**	**Total**
Infectious/Inflammatory	141	63	35	41	280
Malformants	0	2	20	1	23
Traumatic	4	3	0	14	21
Tumor	0	0	4	0	4
Total	145	68	59	56	328

Identification of the main pathologies

The most common pathology was tonsillitis (n=95 or 29.0%) (Table 3).

Table 3. *Distribution of the Most Common ENT Diseases in Children.*

Conditions	**Actual**	**%**
Tonsillitis	95	29,0%
Nasopharyngitis	61	18,6
HAVA	45	13,7
Lymphadenopathy	40	12,2
AOM	31	9,5
Otitis externa	12	3,7
Foreign Bodies	8	2,4
Rhinosinusitis	7	2,1
Cervical fistulas	7	2,1
Rhinitis	6	1,8
Cystic lymphangiomas	4	1,2
Parotiditis	3	0,9
Keloids	3	0,9
Other	6	1,8
Total	328	100

Others: goiters, choanal atresias, mastoid and hypoacusis which are respectively 2 cases, 2 cases, 1 case and 1 case.
HTA: hypertrophy of the tonsils and adenoids
AOM: Acute Otitis Media

4. Discussion

Epidemiological aspects

Children represented 71% of ENT consultants at the MCUH in N'Djamena. This high rate can be explained by the fact that: this hospital exclusively takes care of children from 0 to 15 years old. Several previous studies have reported similar prevalences. Hounkpatin et al [5] in 2011 in Parakou (Benin) published figures of 35.25% of children aged 0 to 15 years. Tall et al [6] in 2016 in Kolda (Senegal) observed a frequency of 33.9% (112 children / 330 patients received in consultation); In 2018 in Cotonou, 25.79% of children aged 0 to 18 years were found in Santos Zounon et al [1]. Similar studies were carried out by Ndjolo et al [7] in 2006 in Cameroon, Fansunla et al [8] in 2013 in Nigeria and Keita et al [9] in 2005 in Mali. These authors found 46.4%, 41% and 35% of children respectively. The immaturity of immunity could explain the frequency of these conditions, which are mostly infectious [3].

The high frequency of oral-pharyngo-laryngeal and rhinological infections is also due to the anatomical position of the auditory tube, which is straight and short in children [4].

Indeed, the recklessness of children of this age and their desire to discover the environment expose them to various infections and domestic accidents. The process of children's empowerment is potentiated by a relaxation of their supervision, certainly due to the increasing energy needed to control them. This point of view was shared by Regonne in Senegal in 2017 [10]. The sex ratio was 1.23 in our study. A male predominance has been reported by several studies, in particular those that had analyzed ENT emergencies in children: Do santos zanon et al in cotonou in 2018 [1], Badou-N'guessan et al [11] in 2017 in Abidjan, C ôte d'Ivoire, S Lawson et al [12] in 2012 in Cotonou, Benin, and Ramarozatovo et al [13] in 2010 in Antananarivo (Madagascar).

The difference in gender was even more pronounced in the case of traumatic pathologies (foreign bodies), partly explained by the notion of higher risk-taking in male children. Raising public awareness of the potential severity of childhood trauma and educating parents about preventive measures could help reduce the incidence of these traumatic conditions [14].

Vaccination status

Out of 328 children, 215 children (65.5%) had their vaccination schedule up to date. Vaccination delays affected only 113 children (34.5%). In a few authors, delays in vaccination are closely related to the level of parental education, in particular the level of education of the family [15]. Parents' attitudes and beliefs about vaccines are also considered [16]. All children and their parents have been made aware of the importance of vaccinations. However, there is a delay between the awareness of the population and the real change in attitudes towards vaccination [17, 18]. This reinforces the practice of systematically reminding people of the importance of vaccinations at each clinical check-up. The risk of infection from delayed vaccinations can be significantly reduced by systematic monitoring and education of parents [19].

Diagnosis

The most affected anatomical sites in our study were the oral-pharyngolaring, nasosinus, cervicofacial and auricular regions with 44.2%; 20.4%; 18.0%; and 17.1%, respectively. Several authors have reported preferential involvement of these same sites in children followed in ENT [6, 20].

According to Tall et al [6], pharyngolaryngeal pathology is the most common (40.2%), followed by rhino-sinus pathology (32.1%) and otologic pathology (22.8%). Njifou et al [20] in 2013 in Cameroon, on the other hand, found rhino-sinus pathology in first place (35.25%), followed by otologic (32.3%) and pharyngolaryngeal pathology (17.16%).

The first of the most common pathologies was tonsillitis. It is a subacute, acute or chronic infection and/or inflammation of infectious origin of the palatine tonsils. The germ comes from the rhino-sinus cavities and is transported by these same natural channels. Adnexal involvement is considered a complication [21, 22].

For Nowak et al [23] it is the most common bacterial infection in children. Its primary prevention involves the elimination of rhino-sinus risk factors such as passive smoking, environmental pollution, and the use of the pacifier [24]. Parent education sessions could promote salt serum nose washing, breastfeeding, and advise against drug prophylaxis. Washing the nose has a mechanical role in disinfecting the nasopharyngeal and is accompanied by early learning to blow the nose. Basic hygiene rules such as multi-daily hand washing give children habits of global prevention against infectious diseases, especially rhino-sinus infections. The use of probiotics is also a very promising prophylaxis [25]. Breastfeeding for more than twelve months reduces the occurrence of childhood infections, particularly otitis media and gastroenteritis [26].

ENT foreign bodies accounted for 8 cases (2.4%) in our study and all foreign bodies were atrial This rate is lower than that found in ENT consultations in various African series (7.9% and 17.74%) [27, 29]. It is a real ENT emergency whose prognosis depends on the appearance of the foreign body, its location and especially on the speed of adequate treatment [28]. Prevention is the best treatment [29]. It involves raising awareness among parents but also among social educators such as doctors, nursery and primary school teachers, religious leaders and the entire population. The use of the media should be an asset to better disseminate information: interactive programmes, television and radio spots, articles in news bulletins and scientific journals, advertising spots, posters in public places

The main recommendations include:

1) Do not put anything in the ears, or in the nose, or clean without medical advice,
2) Keep small or dangerous objects out of the reach of children,
3) Do not startle or hit a child abruptly when eating,
4) Identifying, avoiding contributing factors.

5. Conclusion

ENT pathologies in children are common in consultations, they are dominated by infections and or inflammation. Simple preventive measures could help reduce their incidence, in particular rigorous monitoring of the vaccination schedule and raising awareness among parents and other public actors of the population on the rules of children's lifestyle.

Abbreviations

ENT	Ear noose Throat
MCUH	Mother-Child University Hospital
HTA	Hypertrophy of the Tonsils and Adenoids
AOM	Acute Otitis Media

Author Contributions

Diamoutene Boubacar Sidiki: Conceptualization, Data curation, Formal Analysis, Funding acquisition, Investigation, Methodology, Resources, Writing – original draft

Konate Oumar: Conceptualization, Formal Analysis, Funding acquisition, Investigation, Methodology, Writing – review & editing

Konate Idrissa: Conceptualization, Visualization, Writing – review & editing

Samate Souleymane: Conceptualization, Data curation, Formal Analysis, Project Administration, Funding Acquisition

Traore Moriba: Conceptualization, Data curation, Formal Analysis, Project Administration

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Ndjiannone Kalki: Date Curation, Resources
Ngaringuem Olivier: Validation, Visualization
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Cisse Naouma: Validation, Visualization
Kone Fatogoma Issa: Resource, Supervision, Validation, Visualization, Writing – review & editing

Conflicts of Interest

The authors declare no conflicts of interest.

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