

# Tonsillitis and Their Complications: Epidemiological, Clinical and Therapeutic Profiles

Abdoul Wahab Haidara<sup>1</sup>, Youssouf Sidibé<sup>1\*</sup>, Djibril Samaké<sup>2</sup>, Amady Coulibaly<sup>3</sup>,  
Mamadou Karim Touré<sup>4</sup>, Bréhima Bolonpé Coulibaly<sup>4</sup>, Siaka Soumaoro<sup>5</sup>, Boubacary Guindo<sup>5</sup>,  
Kassim Diarra<sup>5</sup>, Kalifa Coulibaly<sup>5</sup>, Boubacar Sanogo<sup>1</sup>, Mohamed Kéïta<sup>4</sup>,  
Alhousseini Ag Mohamed<sup>4</sup>

<sup>1</sup>ENT and Head and Neck Surgery Department, CHU Mother-Child “Luxembourg”, Bamako, Mali

<sup>2</sup>ENT and Head and Neck Surgery Department, Reference Health Center, Bamako, Mali

<sup>3</sup>Department of Stomatology and Maxillofacial Surgery, CHU-CNOS, Bamako, Mali

<sup>4</sup>Department of Anesthesia Resuscitation, CHU Mother-Child “Luxembourg”, Bamako, Mali

<sup>5</sup>ENT and Head and Neck Surgery Department, CHU Gabriel Toure, Bamako, Mali

Email: \*ysidibe2002@gmail.com

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## Abstract

Tonsillitis or angina, is considered as an inflammation of the palatine tonsils most often of infectious origin. It can be acute or chronic. The germs in question are mostly viruses and bacteria. **Objectives:** The objective of this work was to study the epidemiological and therapeutic profile of tonsillitis and their complications in the ENT Department and Head and Neck Surgery of the Mother-Child University Hospital in Luxembourg. **Patients and Methods:** This is a prospective study over a 12-month period from January 2018 to December 2018, including all patients who presented with tonsillitis and/or their complications. **Results:** Three hundred and fifteen (315) patients were collected during this period. The average age in our study was 14.25 years with extremes ranging from 2 years to 61 years. The sex ratio was 0.65 in favor of the female sex. During this period we recorded 80.95% of cases of uncomplicated tonsillitis including 60.50% for acute tonsillitis, 24.5% for chronic tonsillitis 5% for adenoid tonsillitis and 19.05% for complications. Complications included peritonsillar phlegmon 42.22%, heart disease 33.33%, cervical cellulitis 8.89%, adeno-phlegmon 6.67%, para-pharyngeal abscess 4.44%, and sepsis 4.44%. The exclusive medical treatment was performed in 44.31%. Surgical treatment (drainage incision and tonsillectomy) was performed in 55.69%. **Conclusion:** Tonsillitis and its complications represent an important pathology in ENT. Feynophagy febrile is the pair-origin symptom that can lead to the diagnosis. The prevention of complications is the guarantor of the

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reduction of its morbidity. We recommend that in the absence of RDT (Rapid Diagnostic Test), it is necessary to systematize antibiotic therapy to prevent serious complications.

## Keywords

Tonsillitis, Complication, Mali

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## 1. Introduction

Tonsillitis is a public health problem because of its frequency, recurrence and socio-occupational and economic impact [1]. It is the 3rd infectious ENT pathology after rhinopharyngitis and otitis. These tonsillitis can generate complications that can be locoregional and/or general [2].

In Mali, tonsillitis accounts for 1.8% of the diseases encountered in ENT [3]. About 9 million new cases of tonsillitis are diagnosed in France each year [4]. In addition, the number of tonsillitis is estimated at 40 million per year in the US, 4 million in Spain, or more than 5% of medical consultations in the US and 15% in Spain [5] [6] [7] [8].

Erythematous or erythematopultaceous tonsillitis is distinguished; pseudomembranous tonsillitis; ulcerous or ulceronecrotic tonsillitis and vesicular tonsillitis [9].

The definitive diagnosis of streptococcal infections is made by detection of the germ at the rapid diagnostic test (RDT) [10].

Although data on epidemiological and therapeutic aspects seem well established elsewhere, the fact remains that in some countries, such as Mali, much remains to be done. It is therefore important to take stock of this disease in our community. That is why we conducted this study to improve knowledge of the epidemiological, clinical and therapeutic aspects of tonsillitis and its complications.

## 2. Patients and Method

We carried out a retrospective study on a series of 315 cases of tonsillitis, collected in the Department of Otorhinolaryngology and Head and Neck Surgery (ENT and CCF) of CHU Mother-Child “Luxembourg”, Bamako-Mali. It spanned a 12-month period from January 2018 to December 2018.

We included all patients admitted to outpatient or emergency outpatient care during the study period, whose clinical examination suggested tonsillitis or a complication of tonsillitis.

The variables studied were sociodemographic, clinical, para-clinical and therapeutic aspects. An effective ENT examination focused on the pharyngeal sphere was performed in all our patients. The diagnosis of tonsillitis and/or these complications was made on the basis of clinical, radiological and biological evi-

dence of removal.

The data was processed by SPSS 21.0 French version and entered by Word 2013.

### 3. Results

Frequency: During the study period, we recorded 315 cases of tonsillitis including 255 cases of simple tonsillitis representing 80.95% and 45 cases of complication representing 19.05%. During the study period 4500 patients consulted in ENT including 7% for tonsillitis.

The female sex predominated with 60.63%. The sex ratio was 0.65 in favor of the female sex. The 10 to 20 age group was the most common with 29.33% (**Table 1**). The average age was 14.25 years old with extremes ranging from 2 years old to 61 years old.

Clinically: Only odynophagia was the most frequent reason for consultation with 88.63%.

We found other symptoms associated with type of fever (86.27%) snoring (38.43%) reflex otalgia (37.65%) hyper-sialorrhea (20.39%) dysphagia (15.29%) sleep apnea syndrome (14.12%) and dyspnea (10.20%).

Oropharyngoscopy found bilateral hypertrophy of palatine tonsils in 82.35% of cases and inflammatory in 53.33% of cases.

The complication was observed in 19.05% of cases, ie 45 cases (**Table 2**). This complication was a tonsillar diphtheria in 19 cases, parapharyngeal abscess in 2 cases, cervical cellulitis in 4 cases, adeno-phlegmon in 3 cases, and rheumatic complications with cardiopathy in 15 cases (**Table 3**).

The medical treatment was exclusive combining Antibiotic and analgesic in acute tonsillitis at 39.70%. The surgical treatment associated with antidotics was performed in 60.30% of which 43.58% of the tonsillectomy.

### 4. Discussions

In 12 months, we collected 315 cases of tonsillitis, including 45 cases of

**Table 1.** Distribution of patients by age.

Age group/year	Effective	Frequency%
[0 - 10]	90	28.57
[10 - 20]	92	29.21
[20 - 30]	68	21.59
[30 - 40]	43	13.65
[40 - 50]	15	4.76
[50 - 65]	7	2.22
<b>Total</b>	315	100

**Table 2.** Distribution of patients by type of complication N: 45.

Type of complication	Effective	Frequency
<b>Local complication:</b>		
- Phlegmon peritonsillar	19	42.22
<b>Loco-regional complications:</b>		
- Cervical cellulitis	4	8.89
- Adeno-cellulitis	3	6.67
- Pharyngeal abscess	2	4.44
<b>General complications:</b>		
- Heart	15	33.33
- Sepsis	2	4.44
<b>Total</b>	<b>45</b>	<b>100</b>

**Table 3.** The distribution of patients according to type of cardiac disease found N: 15.

Type of heart disease	Effective	Frequency
Mitral insufficiency (MI)	6	40.00
Mitral recess (RM)	2	13.33
Aortic insufficiency (IAo)	2	13.33
IM/Tripusculian insufficiency	2	13.33
IM/IAo	3	20.00
Total	15	100.00

complications; a respective frequency of 7% and 0.33% of the consultants during the study period. In the United Kingdom in 2009 tonsillitis was found with an incidence of 100 per 1000 inhabitants [11] and peritonsillar phlegmon was found with an incidence of 12/100,000 [12]. The possibility of a complication of acute tonsillitis seemed to us frequent in practice, this is explained by the nonobservance of the medical treatment by the patients on the one hand and on the other hand the maladaptive management of tonsillitis, cause the evolution of this pathology is cascading. We believe that a multicentric study may identify more tonsillitis and complications.

Tonsillitis and its complications can occur at any age [1] [13]. In our series, the extreme ages were 2 years old and 61 years old. Similarly, 82.35% of our patients were under 30 years of age, which is consistent with the TIMBO SK [3] study, where 67.74% of patients were <30 years of age. The most representative age group was that of 10 to 20 years with 29.21% of cases in our series. It was the same at SOWERBY *et al.* [12].

Frequency in this age group may be explained by increased exposure to rhinopharyngitis episodes associated with immune failure at this age. At this age tonsillitis is discovered in consultation with children consulting for otalgia, or for cries incessant.

The complications are predominant in the age group 20 to 30 years with a frequency of 39.13%. According to DULGUEROV [14] this age group is 20 to 40 years old.

In our series, we observed a slight predominance of women (60.63%). This is in line with TIMBO SK [3], which contributed 72.03%. Other authors have found a male predominance [1]. According to the literature, the predominance of sex has no impact on the occurrence of tonsillitis [15].

All professional classes were represented in our study. The student and student status was the most represented profession (45.88%) because it also falls in the youth category (49.7%) [16]. We believe that the high mobility of this population can be a determining factor. Elsewhere their promiscuity can be a factor.

As odynophagia is the main sign of tonsillitis, it was found in 88.63% of our patients. We found other symptoms associated with type of fever (86.27%), snoring (38.43%), reflex otalgia (37.65%), hyper-sialorrhea (20.39%), dysphagia (15.29%), sleep apnea syndrome (14.12%) and dyspnea (10.20%). TIMBO SK [3] found a predominance of odynophagia-fever association with 42.3%.

The duration of evolution of tonsillitis and its complications has been little discussed in the literature. The short duration of evolution is linked to an early consultation in the hospital by patients who came for consultation on their own, hence the treatment was instituted immediately according to the recommendations of the AFSSAPS [11].

The long duration of tonsillitis is explained by the lack of observance of the medical treatment instituted on the one hand, and the maladjustment of antibiotic therapy, which does not respect the recommendations of the AFSSAPS. These observations note the cascade evolution of the infection, its maintenance and the passage from several acute tonsillitis to chronic tonsillitis and even complications. The mode of recruitment of tonsillitis testifies this because 16.86% were referred and the clinical history of these patients highlighted the nonobservance and the maladjustment of the antibiotherapy not respecting the current recommendations.

In our study uncomplicated tonsillitis was found with 90% and complicated tonsillitis was 10%. TIMBO SK [3] found respectively 75.8% and 24.2%. A Cottonou [15] tonsillitis was acute in 45.99% and was complicated in 54.01% including recurrent tonsillitis with 25.26% and chronic tonsillitis with 19.16%.

It can be said that tonsillitis is initially simple but they can be complicated by the delay or maladjustment of the treatment, the immune status and the virulence of the germ in question.

According to the literature review the peritonsillar phlegmon is the main complication of tonsillitis and 2.4% of annual consultations in urgency [17]. This observation corroborates with our study of which 42.22% was represented by phlegmon. The incidence of these complications represented 2/1000 in the study of PIERRE RABANY [18] in 2003. In the United Kingdom [2] the peritonsillar phlegmon was found with an incidence of 12/100,000 in 2013.

Heart disease accounted for 33.33% of complication in our study. Isolated mi-

tral regurgitation was the most common heart disease with 40%. This result is similar to that of de Maiga. S [19] who found isolated mitral regurgitation at 43.30% greater than that of Coulibaly. E [20] who had regained isolated mitral insufficiency 15.38%.

Other complications in our study included cervical cellulitis (13.33%), adenophlegmon (10%), para-pharyngeal abscess (6.67%), sepsis (6.67%), the TIMBO SK study [3] the same complications were found.

According to the literature the antibiotic management of tonsillitis is well codified, based on the detection of group A hemolytic streptococcus by TDR. The AFSSAPS [11] updated the recommendations concerning this treatment by proposing to treat only proven tonsillitis with S $\beta$ HA and by favoring the use of beta-lactams in short treatment.

The difficulty lies in the differentiation of viral and bacterial tonsillitis in our context because we do not currently have the TDR. We have recommended treating all cases of tonsillitis systematically with antibiotics, which is in line with the current recommendations in France, which is to systematically treat acute tonsillitis with antibiotics [21].

Medical treatment was exclusive at 39.70% in our study compared to a study in Cotonou [15] where medical treatment was instituted in 45.99%. We used beta-lactams and macrolides, duration of antibiotic therapy ranged from 7 to 10 days.

This surgical treatment involved tonsillectomy 43.58%, incision and drainage in 16.86%. In France [22], out of approximately 670,000 annual anesthesia in ENT, 17% are for tonsillectomies.

These indications included recurrent acute tonsillitis, complications and obstructive tonsillitis. This observation corroborates the study of YAHYAOU M [22]. In England and Wales more than 50,000 tonsillectomies have been performed, most of them involving recurrent tonsillitis [23].

## 5. Conclusions

Tonsillitis and its complications represent an important pathology in ENT. Tonsillitis occurs in the majority of cases in children and young adults particularly between 20 and 30 years with a slight predominance of women.

Odynophagia is the most frequent warning sign. Peritonsillar phlegmon is recognized as the most frequent complication. The diagnosis of tonsillitis and its complications are essentially clinical. The medical treatment of acute tonsillitis is well codified based on the detection of streptococcus by TDR. The indications of the surgical treatment are well defined.

## Conflicts of Interest

The authors do not declare any conflict of interest.

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