



## The Microbiological aspect of descending necrotizing mediastinitis

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### Background:

Necrotizing descending mediastinitis (NDM) is an infection of the mediastinum originating from an oral, cervical or facial site, its progression is rapid and fatal in the absence of an early and adequate diagnosis and treatment. It is a surgical emergency that requires multidisciplinary care in a specialized environment. This management includes three main parts: surgical drainage, resuscitation and appropriate antibiotic therapy which depends on the bacteriological profile. The study's objective was to establish a bacteriological profile of NDM in Tunisia.

### Methods:

This was a retrospective study spread over eighteen years from 2002 to 2020; It included all patients admitted for a NDM in the anesthesia and intensive care department. We collected and analyzed the demographic, clinical, and therapeutic data.

### Results:

Our study included 41 patients with a median age of 51.4 years, 21 among them were diabetics, 22 were smokers and 15 patients received non-steroid anti-inflammatory drugs. The sex ratio was 2.15. The origin of the infection was dental in 20 cases.

	Cases	%
Dental Abscess	20	50
Tonsillar Abscess	15	37.5
Retropharyngeal Abscess	1	2.5
Parapharyngeal Abscess	2	5
Cervical Adenophlegmon	2	5

The delay between the onset of symptoms and admission was a median of 8 days and the main reason for consultation was cervical swelling in 32 patients. The diagnosis was confirmed by the thoracic computed tomography, which was carried out systematically in all patients and showed an extended mediastinitis Endo II in 29 patients. Bacterial cultures were positive in 25 patients. Among them 11 were poly-microbial. We isolated 38 germs. The most frequent species were *Streptococcus*, *Staphylococcus aureus* and *Klebsielle pneumoniae* identified in 12, 11 and 4 cultures respectively (Figure 1).

Multidrug resistant bacteria were isolated in six patients and the most common one was the extended spectrum  $\beta$ -lactamase producing *Enterobacteriaceae* identified in three cultures. All patients had received at least triple broad-spectrum antibiotic therapy. The combination of cefotaxime, aminoglycoside and metronidazole was the most common therapy used in 23 patients. Nine patients died in a septic shock state.

### Discussion:

The most frequent origin of NDM is dental. It accounts for 50% of all infections in our series, which is in line with most studies done since 1960 [1]. This origin is prevalent in developing countries due to poor oral hygiene, whereas laryngolaryngeal infections have become more common in developed countries[2].

### Conclusion:

In most cases the germs involved have not been isolated or they are multibacterial infections; the bacteriological profile is that of the oral flora and the ENT sphere with predominance of streptococcus, staphylococcus and gram negative bacilli. therefore the first line probabilistic antibiotic therapy must take into consideration this bacterial flora.

This study can serve as a basis for reflection for the optimization of the empirical treatment of mediastinitis in Tunisia.

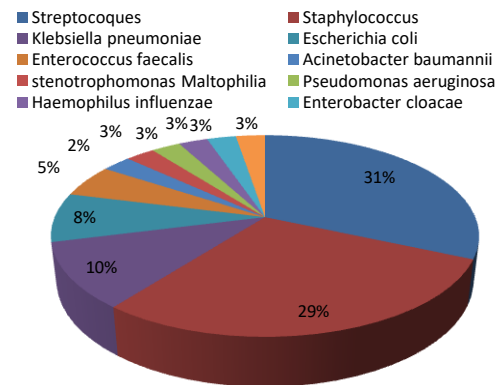


Figure 1 : Bacteriological profile of descending necrotizing mediastinitis