

TITLE: CASE REPORT OF AN INTRATONSILLAR ABSCESS CAUSED BY NON-DIPHThERIA TOXIN PRODUCING *Corynebacterium diphtheriae* STRAIN

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ABSTRACT:

During the last decades, unusual clinical and epidemiological features of diphtheria have been verified, including cases and/or outbreaks among completely immunized adults and children. Besides classical diphtheria, an increasing number of systemic infections caused by non-toxigenic *C. diphtheriae* strains have been reported and complicate the diagnosis and treatment of infection. Difficulties in routine laboratory diagnosis using conventional biochemical tests and the advances in genomics and proteomics allowed the development of relevant tool for accurate and fast identification of *Corynebacterium* spp., such as the proteomic technique of mass spectrometry – MALDI-TOF MS. This study aimed to report the original case of an intratonsillar abscess due to a non-diphtheria toxin-producing *C. diphtheriae* strain in a 21-year-old female adult attended in an ambulatorial department located at Rio de Janeiro metropolitan area, Brazil. The bacterial strain was identified by MALDI-TOF MS (99,9%) and confirmed by multiplex PCR (mPCR). mPCR was also used to determine the strain toxigenic status. Additionally, the antimicrobial susceptibility profile was determined by the disk diffusion method. The non-toxigenic *C. diphtheriae* strain was found susceptible to penicillin, ciprofloxacin, gentamicin, linezolid e vancomycin. This study reinforces that *Corynebacterium* spp. should be identified through adequate laboratorial procedures. Changes in the profile of infections caused by these microorganisms highlight the importance of health professionals being aware and up to date, in terms of clinical diagnosis and laboratorial identification of pathogenic *Corynebacterium* species, since early recognition can contribute to the control of diphtheria outbreaks that are expected to increase in the coming years as results of the COVID-19 pandemic.

KEYWORDS: *Corynebacterium diphtheriae*, non-toxigenic, intratonsillar abscess, atypical infection.