Acta Scientific Microbiology (ISSN: 2581-3226)

Volume 8 Issue 10 October 2025

Clinical Case Report

Role of Direct Gram Examination in the Diagnosis of Vincent's Angina: About a Case

El Azzaoui Kamal[1,2]*, El Bahraouy Rabii[1,3], Louzi Lhoussain[1,2] and Sbiti Mohamed[1,3]

[1]*Bacteriology Laboratory, Moulay Ismail Military Hospital of Meknes, Morocco*

[2]*Faculty of Medicine and Pharmacy of Rabat, Mohamed V University, Morocco*

[3]*Faculty of Medicine, Pharmacy and Dentistry of Fez, Sidi Mohamed Ben Abdellah*

***Corresponding Author:** El Azzaoui Kamal, Bacteriology Laboratory, Moulay Ismail Military Hospital of Meknes, Morocco.

Received: September 04, 2025

Published: September 15, 2025

Abstract

Vincent's angina causes necrotic ulcerative lesions of the oral mucous membranes and tonsils associated with fever, subangulo-maxillary lymphadenopathy, odynophagia and foul breath. It is favored by lack of oral hygiene, malnutrition and stress. Its diagnosis can be confused with other oropharyngeal infections. Due to the scarcity of studies on Vincent's angina, this work on a clinical case aims to broaden knowledge on this pathology and to show the role of the Gram examination in the diagnosis and therapeutic management.

Keywords: Vincent's Angina; Diagnosis; Direct Examination; Gram; Fuso-Spirillary Association

Introduction

Vincent's angina, first described by Plaut in 1894 and Vincent in 1896, is a common pathology in young adults and children during their teething [1,2]. Predisposing factors include poor oral hygiene, malnutrition and stress [3]. The germs involved are spindle-shaped bacilli (*Fusobacterium plaut-vincent*) and spirochetes (*Spirochaeta dentium*) which are saprophytic but become pathogenic when they are combined [4,5]. It presents clinically with necrotic ulceration associated with fever, subangular maxillary lymphadenopathy, odynophagia and fetid breath. Therapeutic treatment is based on taking penicillin V or, in case of allergy, metronidazole [6].

Due to the scarcity of studies on Vincent's angina, our work aims to broaden knowledge on this pathology and to highlight the decisive contribution of direct Gram examination in the rapid and accurate diagnosis, through the observation of a clinical case of recurrent angina.

Patient and Methods

It is a 5-year-old male child, with no medical history, admitted to the otorhinolaryngology department at the Moulay Ismail military hospital in Meknes for treatment of recurrent angina.

During consultations, he presented with fever, cervical lymphadenopathy and a unilateral whitish ulcer-necrotic lesion of the tonsil that were very painful when swallowed.

A tonsillar sample is taken using a sterile swab from the ulcer-necrotic area. The sample was quickly transported to the laboratory.

Direct examination was performed after Gram staining, by observation under an immersion light microscope. Culture was carried out on standard media in an anaerobic jar at 37 °C for 5 days. PCR amplification testing was not performed.

Results

Direct Gram examination showed numerous Gram-negative spindle bacilli associated with fine spirochetes (Figure 1 - illustrated by arrows). These elements were in agreement with the clinical examination of ulcer-necrotic angina. Culture did not allow the isolation of anaerobic bacteria, which underlines the difficulty of isolating strict anaerobic bacteria and highlights the interest of direct examination as a rapid and reliable diagnostic tool.

The child had a favourable course after treatment with metronidazole combined with oral hygiene with an antiseptic mouthwash.

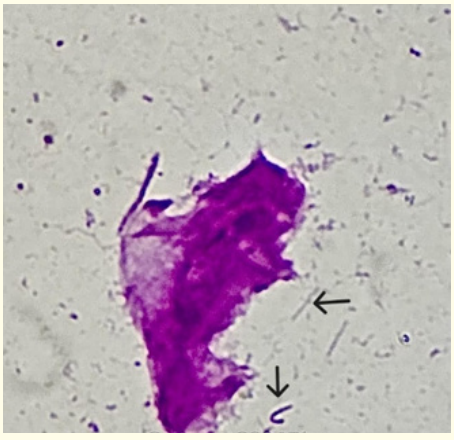

Figure 1: Fusospirillary association observed on Gram examination (objective: x100) (Taken at the bacteriology department of the military hospital of Meknes).

Discussion

Vincent's angina is characterized by necrotic ulceration of the tonsils, caused by the overgrowth of anaerobic bacteria such as fusobacterium and spirochete. It is related to the decrease in gingival microcirculation and salivary secretion which cause a disruption of the immunological response by altering the functionality of polynuclear cells and lymphocytes and reducing chemotaxis at the site of infection.

In our clinical case, direct Gram examination guided the diagnosis, whereas anaerobic culture did not isolate the bacteria responsible for the infection. Several publications, for example, those of Paula., *et al*. [8] and Khademi., *et al*. [9], have shown that direct Gram examination remains the first-line examination to guide the diagnosis quickly.

The difficulty of isolating anaerobes in culture is well known and can lead to false-negative cultures if the conditions of transport and sowing are not strictly respected.

The diagnosis of Vincent's angina can be confused with other oropharyngeal infections such as viral infections, diphtheria, syphilis, and group A streptococcal infections [6,7]. This confusion is at the origin of the lack of professional competence to recognize the fusospirillary association as well as the lack of specification for Vincent's angina in the laboratory examination request. This is reported in a survey carried out by Paula., *et al*. [8] between January 2018 and December 2023, showing that only 10 cases were identified and only three examinations were specifically requested for Vincent's angina.

Vincent's treatment of angina is based on taking penicillin V, otherwise, if needed, tetracycline, erythromycin, or metronidazole [6-10]. However, there are other therapeutic procedures, as shown by the clinical case of Khademi., *et al.* whose cure was achieved through the use of mouthwashes and salt water after a treatment failure with amoxicillin and cephalexin for seven days [9].

Conclusion

Before the diagnosis of Vincent's angina was made, the child in our case had recurrent strep throat resistant to treatment. The diagnosis was based on the clinic supplemented by the observation of the fusospirillary association, which shows the importance of direct examination of Gram.

Conflicts of Interest

The authors declare that they have no links of interest.

Bibliography

1. Barnes GP., *et al*. "Acute necrotizing ulcerative gingivitis: a survey of 218 cases". *Journal of Periodontology* 44.1 (1973): 35-42.

2. Cummings GO. "Vincent's Angina". *New England Journal of Medicine* 202.16 (1930): 768–771.

3. Hartnett AC and Shiloah J. The treatment of acute necrotizing ulcerative gingivitis". *Quintessence International* 22.2 (1991): 95-100.

4. Almeida SD and Barboni V. "Differential diagnosis between acute necrotizing ulcerative gingivitis (guna) and oral manifestations of akatalasia". *Sitientibus* 30 (2004).

5. Lopes HL. "Plaut-Vincent's angina and its complications". *Revista Brasileira de Otorrinolaringologia* 6.3 (1938): 211-218.

6. Kaplan D. "Acute necrotizing ulcerative tonsillitis and gingivitis (Vincent's infections)". *Annals of Emergency Medicine* 10.11 (1981): 593-595.

7. Rodríguez-Rodríguez M., *et al*. "Unilateral tonsillitis: Plaut-Vincent angina". *Semergen* 46.2 (2020): e9–10.

8. De Paula CC., *et al*. "Laboratory record of Vincent's Angina: case report". *Saúde (Santa Maria)* 50.1 (2024): e88416-e88416.

9. Khademi F and Aryan E. "Vincent's angina in a 17-year-old girl with emotional stress: a case report". *Archives of Clinical Infectious Diseases* 10.3 (2015) : e60122.

10. Cañibano R., *et al*. "Unilateral ulceronecrotic angina : Plaut-Vincent tonsillitis". *FMC Formacion Medica Continuada en Atencion Primaria* 23.5 (2016): 247-248.