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Case Report

Trismus as a clinical manifestation of tetanus: A case report and literature review

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Abstract

Rare in developed countries because of vaccination, tetanus remain public major problem of health in poor countries and each agecan be affected. If newborn tetanus is one of the first causes of babies' death in these countries, its prognosis depend onseveral parameters. Incubation duration, quick generalization of signs, signs gravity, possibility of good treatment and mostly subject topical (age, existence of others diseases) has a great impact on this disease evolution. Lateness in consultation, confusion in unknow symptoms interpretation, long ways for treatement in our context lead to delays diagnosis. We report a case of tetanus diagnosed with Armengaud's "captive" tongue depressor test at the stage of cardiopulmonary complications, in an elderly subject who had long been followed in stomatology for tight trismus and dysphagia. As tetanus is still present in our environment, the odontostomatologist, faced with a trismus with no obvious oral cause, should think about tetanus which he confirmed with Armengaud's simple "captive" tongue depressor test in order to refer the patient as soon as possible for early management.

Keywords: Tetanus, Trismus, Armengaud's "captive" tongue depressor, Complications, Case report

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1. Introduction

Tetanus is a neurological disease caused by tetanoplasmin, a potent protein toxin produced by Clostridium tetani.[1] It is characterized by muscular contractures associated with paroxysms. Rare in developed countries thanks to vaccination, tetanus remains a major public health problem in developing countries. Neonatal tetanus remains one of the leading causes of perinatal mortality. In these countries, tetanus affects one million people a year. It affects people who have not been vaccinated, and directly attributable mortality is estimated at 500,000 deaths a year. The virtual disappearance of this disease in all countries with an effective vaccination program confirms the effectiveness of tetanus vaccination.[2] A clinical case of tetanus complicated by pneumopathy and heart failure in an elderly subject was observed at CHUYO. The case was diagnosed late. The patient was being treated for trismus and dysphagia without any other associated symptoms in the Department of Odontostomatology and Maxillofacial Surgery. The interest of this study lies in the possible diagnostic difficulties due to late consultations, inappropriate referrals, and comorbidities that can mask the calling signs of the disease, and the sensitivity of Armengaud's "captive" tongue depressor test in the diagnosis of tetanus in odonto-stomatology.

2. Observation

Patient information: Mr P.G, aged 75, farmer, was admitted to the odonto-stomatology and maxillofacial surgery department of the CHU Yalgado Ouédraogo on 26/09/2023 for difficulties in opening the mouth, of sudden onset but evolving for about two weeks, and selective dysphagia to liquids. The patient was treated unsuccessfully in two outlying health facilities before being referred to the Centre Hospitalier Universitaire Yalgado Ouédraogo.

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2.1. Clinical findings

Interrogation revealed that the foot had been injured by a daba during field work more than a month before the onset of the disease. The patient's tetanus vaccination was not up to date. On clinical examination, the patient was conscious and cooperative, but in poor general condition, with a fever of 39°C and a skin fold indicating dehydration and malnutrition. Exo-oral examination revealed painful contractures in the masseterine and anterior cervical regions. Endo-buccal examination revealed trismus, moderately tight, with mouth opening limited to 2.5 cm. Difficult examination of the oral cavity also revealed, after retraction of the vestibule, poor oral hygiene associated with tartar deposits on the tooth necks, but no visible carious pathology. The patient also presented with painful and total dysphagia to liquids.

2.2. Diagnostic approach

The hypothesis of periodontal cervico-facial serous cellulitis was raised, and treatment was instituted with amoxicillin injection 2 grams twice daily, paracetamol injection 1 gram every six hours, and 1.5 liters of solution daily. The panoramic radiograph requested revealed no carious or bone pathology. However, given the appearance of facial spasms after five days of treatment, the persistence of bilateral trismus and the positivity of Armengaud's “captive” tongue depressor sign, the diagnosis of tetanus was raised and retained, and the patient was transferred to the infectious diseases department for better management.

2.3. Therapeutic intervention and follow-up

After admission to this department and further investigations (blood count, thick blood drop, chest X-ray, etc.), a diagnosis of generalized Mollaret stage II tetanus was made, with cardiopulmonary complications. Appropriate management (diazepam 10mg 2 ampoulesx3/d; phenobarbital 80mgx2/d; penicillin G 2 Mx2/d; ceftriaxone 2g/d; 1 dose of tetanus vaccine and 1 dose of tetanus serum; furosemide injectable 1Ax2/D in IVD, potassium chloride capsules/D and paracetamol injectable solution in case of fever) was implemented until the patient's complete recovery after one month's hospitalization.

3. Patient Perspective

The non-literate patient acknowledged that the treatment was effective, given the disappearance of the symptoms that had brought him to the clinic in the first place. This was despite the fact that, at certain times during his hospitalization, the cost of the medication was difficult for him to afford.

He nevertheless expressed his satisfaction and gratitude to the medical team, whose care had improved his quality of life and enabled him to resume his rural activities in full health.

4. Discussion

Tetanus is an infection considered rare or absent in countries with a high level of hygiene, and with an almost zero mortality rate. However, the disease is still present in Africa, with high mortality rates.[2-3]

In developed countries, the incidence of tetanus has become very low, thanks to a vaccination policy that includes booster doses, improved hygiene conditions and appropriate wound management. In developing countries, however, tetanus remains a major health problem.[4]

In our patient, the portal of entry was tegumentary on a lower limb, as in Wateba's 57% series.[5] The occurrence of these wounds is thought to be encouraged by the fact that people walk or work in the fields barefoot, as they often do not have the financial means to afford closed shoes.

Also, the use of traditional equipment (hoe, daba, machete...) for farming activities without any prevention of injury risks could explain these high wound rates among the population. The generalized form of tetanus is relatively frequent in African series.[5]

In our patient's case, the long itinerary he followed was synonymous with diagnostic trial and error, financial wastage, unsuitability of the referral service and hence therapeutic wandering; the frustrating clinical picture with signs of serous cellulitis at the outset, as well as the initial reason for consultation of limited mouth opening, did not allow for rapid diagnosis and management of tetanus. Indeed, the suspicion of serous cellulitis accompanied by a trismus supposed to be of dental origin led us astray at the outset, due to the routine association of these three signs in the department's daily practice. Finally, the rarity of tetanus in the current practice of odonto-stomatologists did not allow us to think of it earlier. Eventually, however, the bilateral, painful and permanent nature of the trismus, the positivity of the “captive” tongue depressor sign and the appearance of spasms led to the diagnosis of tetanus. Tetanic trismus is a bilateral, symmetrical, painful trismus, with episodes of paroxysmal contractures, either spontaneous or provoked by nociceptive stimuli. During these paroxysmal attacks, pain is exacerbated. Trismus is invincible and permanent, disappearing neither at complete rest nor during sleep. This allowed us to rule out a dental cause for the trismus, not only because the radiograph did not reveal any pathology of the dental organ, but also because one of the specific features of dental trismus is its unilateral nature, with no spontaneous or provoked episodes of exacerbation. Armengaud's “captive tongue depressor” test is useful in frustrated forms: when a tongue depressor is introduced into the mouth and touches the posterior wall of the pharynx or soft palate, without inducing vomiting, the masseter muscles reflexively spasm and capture the tongue depressor. This confirms the data in the literature[6-8] according to which this test has a high specificity (100%) and sensitivity (94%) for diagnosing tetanus.

Complications of tetanus are often infectious, and bronchopneumopathy is rife, according to Tanon in Abidjan.[9]. On the other hand, cardiac complications due to the direct effect of the toxin, responsible for myocarditis, are said to be rare. These complications are often the cause of death, especially in the elderly, who are at high risk of tare decompensation. The seriousness of tetanus is demonstrated at the extremes of life. The case-fatality rate for neonatal tetanus reached 48.8% in the series by Manga in Dakar, while Tanon in Abidjan noted that the poor prognostic factors for tetanus were age over 60 [9] in his series, with a case-fatality rate of 64.1% in the elderly. Similarly, the existence of other underlying pathologies is a poor prognostic factor.

As reported by some authors[1,6] our patient showed a favorable course of treatment.

5. Conclusion

This observation highlights the sometimes long and perilous medical course taken by patients in our country before reaching a correct diagnosis and appropriate treatment. As tetanus is still present in our environment, the odonto-stomatologist, faced with a trismus with no obvious oral cause, should think of tetanus, which he will confirm with the simple Armengaud "captive" tongue depressor test, in order to refer the patient as soon as possible for early management. Finally, this case reminds us of the importance of adhering to the tetanus vaccination schedule.[10]

6. Author Contributions

Dr. Wendpouiré Patrice Laurent Guiguimdé, Corresponding Author, Principal Investigator, Manuscript Writing
Dr. Souleymane Bougoum, Manuscript Writing and Review
Dr. Marie Elvire Nokam Abena, Literature Review, Manuscript Reading
Professor Wendpouloumdé Aimé Désiré Kaboré, Editorial Supervisor, Bibliographic Research, Design Editing

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8. Conflict of Interest

None.

References

1. Kassi A, Kouakou G, Assouan C, Mossou C, Doumbia A, Bissagnené E. Tétanos après application de topique traditionnel sur une dent cariée. *Med buccale Chir buccale*. 2015;41(10):249-51.
2. OMS. Progrès accomplis en vue de l'élimination du tétanos maternel et néo-natal dans le monde et le maintenir, 2000-2020. EH 2022;97(11):97-108.
3. Minta DK, Traoré AM, Dabo G, Coulibaly I, Diallo K, Cissé H, et al. Tétanos. EMC –Maladies infectieuses, 2018;15(4):1-13.
4. Meregildo-Rodriguez ED, Asmat-Rubio MG, Vásquez-Tirado GA. Tetanus secondary to oral and odontogenic infections: a case report and systematic literature review. *Infex Med.* 2023;31(1):93-102.
5. Wateba MI, Diop SA, Nichols S, Adjoh S, Gbadamassi G., Patassi A. et al. Tétanos et VIH: une association fortuite ? Cahiers d'études et de recherches francophones/santé, 2008;18(3):131-4.
6. Anzouan-Kacou E, Assouan C, Aba T, Nguessan D, Adouko-Aka J, Salami A, Konan E, Assa A, Tétanos post-avulsion dentaire : A propos d'une observation. *Odonto-Stomat Trop.* 2015;38(149):10-2.
7. Aubry P, Gaüzère BA. Tétanos. Actualités 2023, 1-11. Mise à jour le 29/11/2023 www.medecinetropicale.com
8. Baviskar PS. Tetanus of suspected dental causality. *J Stomatol Oral Maxillofac Surg.* (2020):122(1):115-8.
9. Tanon AK, Eholié SP, Coulibaly-Dacoury C, Ehui E, N'doumi M, Kakou A. et al. Morbidité et mortalité du tétanos dans le service des maladies infectieuses et tropicales d'Abidjan (1985-1998). *Bull Soc Pathol Exot,* 2004;97(4):283-7
10. Ulfa M, Husna NA. A case report of generalized tetanus in a 42-year-old man with dental infection. *J Basic Clin Physiol Pharmacol*. 2019;30(6):1-4.

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