Case report

Tetracycline induced mucosal ulceration: A rare drug reaction

Rakesh Kumar[1*], Vivek Sharma[2], Sukhbir Singh[3], Hardeep[4]

[1]Assistant Professor, Punjab Institute of Medical Sciences, Jalandhar, India
[2]Reader, Deshbhagat Dental College, Muktsar, India
[3]Associate Professor, Punjab Institute of Medical Sciences, Jalandhar, India
[4]Tutor, Punjab Institute of Medical Sciences, Jalandhar

ABSTRACT

Although the side effect of tetracycline like GIT disturbance, hepatotoxicity, photosensitivity and staining of teeth are fairly common but dermatological reaction is rare. In this article, we report a case of tetracycline induced intraoral lesions as well lesions on the glans penis which subsided after the discontinuation of tetracycline.

Key words: Tetracycline, pericoronitis, actinobacillus, actinomycetemcomitants

Citation: Kumar R, Sharma V, Singh S, Hardeep. Tetracycline induced mucosal ulceration: A rare drug reaction. Int J Pharmacol and Clin Sci 2012;1:82-4.

INTRODUCTION

The tetracyclines are broad-spectrum antibiotics with activity against aerobic and anaerobic gram negative organisms, rickettsiae, mycoplasmas and chlamydiae. Although the exact incidence of tetracycline use in oral infection is not known, still it is frequently used as an empirical therapy.

Various skin reactions including morbilliform rashes, urticaria, fixed dose eruptions, and generalized exfoliative dermatitis may follow the use of any of the tetracyclines, but they are rare. Other effects that have been attributed to hypersensitivity are burning of the eyes, cheilosis, atrophic or hypertrophic glossitis, pruritus ani or vulvae, and vaginitis; these effects often persist for weeks or months after cessation of tetracycline therapy. Although the side effect of tetracycline like GIT disturbance, hepatotoxicity, photosensitivity and staining of teeth are fairly common but dermatological reaction is rare.[1] We report the case of a patient with a rare manifestation of tetracycline induced mucosal ulceration.

CASE REPORT

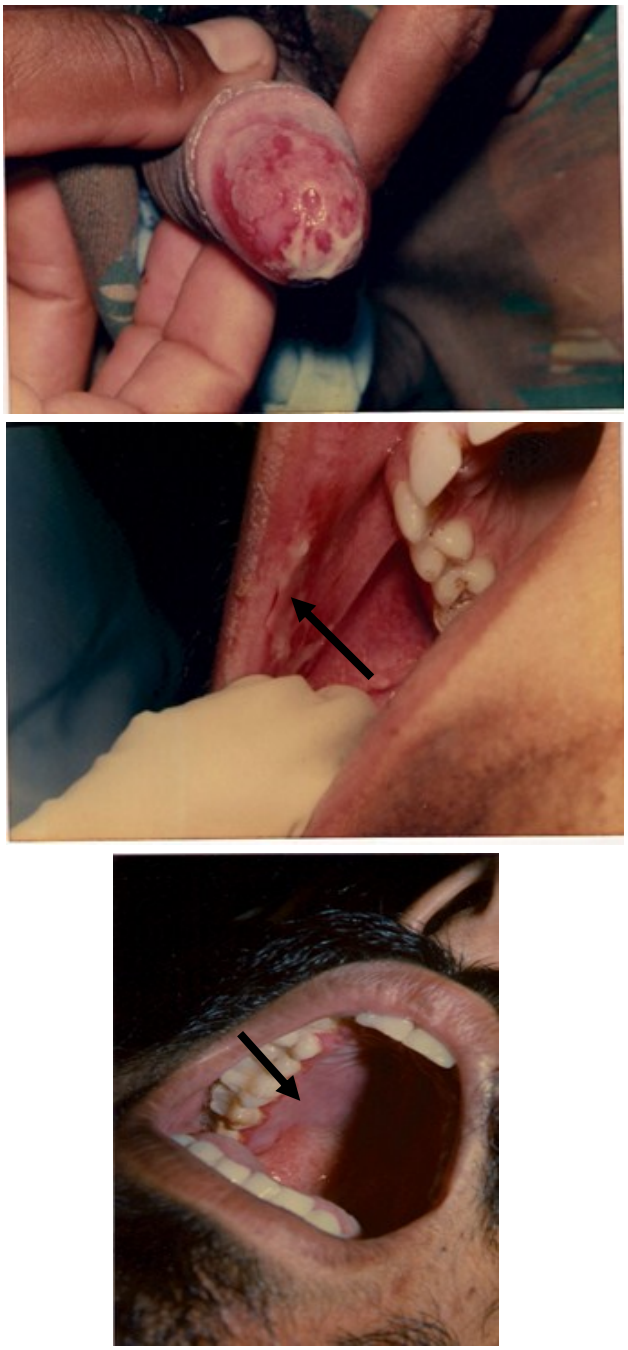
A 34-year-male reported to the out patient department of periodontics, with complaint of pain in left side of jaw and difficulty in opening the mouth for last 4 days. Oral examination revealed partially erupted left mandibular last molar with inflamed pericoronal flap. He was diagnosed as pericoronitis 38. His present and past medical and drug history was insignificant. He was prescribed cap. tetracycline 250 mg four times daily along with 0.2% chlorhexidine mouthwash twice daily. Patient reported next day with intraoral lesions as well lesions on the glans penis. The lesions were multifocal, erosive covered with pseudomembrane and surrounded by erythema (Figure 1).

The tetracycline was immediately stopped and betadine 5% solution was prescribed to be applied on the lesions two times a day for three days. Concurrently no other medication was prescribed to the patient. Patient lesions disappeared after 7 days. Subgingival irrigation with 0.2% chlorhexidine was done consecutively for 3 days and pericoronal inflammation subsided.

Received : 07 - 08 - 2012
Revised : 22 - 09 - 2012
Accepted : 25 - 09 - 2012

*** Correspondence :** bagharakesh@hotmail.com
Conflict of interest: Nil
Source of support : Nil
Copyright: © 2012 Journal. All rights reserved.

Figure 1: Mucosal ulceration and erythema on the glans penis and in buccal cavity



DISCUSSION

Tetracyclines are widely used in the treatment of periodontal disease. It is inexpensive and its ability to concentrate in the gingival crevice is 5 - 7 times that in serum. The meta-analysis of various studies has shown statistically significant improvement in attachment loss associated with periodontitis, when tetracycline are given as an adjunct to scaling and root planning.[2] Amoxycillin or metronidazole or their combination may be used in periodontal infections but we used tetracycline due to its lower cost and its property to inhibit connective tissue breakdown.[3]

Several studies have demonstrated that tetracyclines at low gingival crevicular fluid (GCF) concentrations (2-4 µg/ml) are very effective against many periodontal pathogens.[4] In addition tetracyclines exert anticollagenase effect that can inhibit tissue destruction and may aid bone regeneration.[5] Tetracyclines have been investigated as adjuncts in the treatment of localized aggressive periodontitis (LAP). Actinobacillus actinomycetemcomitans is a frequent causative microorganism in LAP and is tissue invasive. Therefore mechanical removal of calculus and plaque from route surfaces may not eliminate this bacterium from the periodontal tissue. Systemic tetracycline can eliminate tissue bacteria and has been shown to arrest bone loss and suppress actinobacillus actinomycetemcomitans levels in conjunction with scaling and root planning.[6]

On the next day after starting tetracycline, Patient reported with intraoral lesions as well lesions on the glans penis. Patient was asked to discontinue the medicine and apply betadine on the lesion twice daily. Discontinuation of tetracycline results in stabilization and ultimately disappearance of the rash by 7 days. The score on Naranjo adverse drug scale was 5 indicating a probable relationship.[7] The score was obtained based on previous reports of reaction, appearance of adverse event after medication and improvement of lesions on discontinuation of drug.

The pathogenesis of most maculopapular rash is unknown. Hypersensitivity to tetracycline is much less common and anaphylaxis has occurred very rarely. The severity of dermatological toxicity due to tetracycline is mild or moderate and relative frequency at which this antibiotic causes specific adverse reactions is least frequent.[8]

Systemic and local anti-infective can reduce the bacterial challenge in pericoronitis.

Anti-infective therapy is only an adjunct to the mechanical plaque control measures which is achieved by disruption of bacterial biofilm on the teeth and by removal of factors responsible for plaque accumulation resulting in healing of pericoronitis and further prevention is taken by building the oral hygiene of the patient. In the present case the adverse effect of tetracycline may be due to variation among individuals in susceptibility to the drug. When side effects do occurs the offending drug must be stopped and treatment of drug side effects should be physically managed and if required is treated by prescribing drugs which are relatively free from side effects. The use of inexpensive and efficacious tetracycline should not be withheld but oral drug reactions should be kept in mind while prescribing tetracycline in various dental or medical conditions.

ACKNOWLEDGEMENT

Not reported

REFERENCES

1. Chambers HF, Deck DH. Tetracyclines, macrolides, clindamycin, chloramphenicol, streptogramins and oxazolidinones. In: Katzung B, Masters S, Trevor A, editors. Basic and Clinical Pharmacology. 10th ed. New York: Mc Grew-Hill; 2007. p.745-8.
2. Herrera D, Sanz M, Jepsen S, Needleman I, Roldan S. A systemic review on the effect of systemic antimicrobials as an adjunct to scaling and root planning in periodontitis patients. J Clin Periodontol 2002;29:136-59.
3. Swift JQ, Gulden WS. Antibiotic therapy - managing odontogenic infections. Dent Clin North Am 2002;46:623-33.
4. Gordon JM, Walker CB, Murphy JC, Goodson JM, Socransky SS. Tetracycline: Levels achievable in gingival crevice fluid and in vitro effect on subgingival organisms. Part I. Concentrations in crevicular fluid after repeated doses. J Periodontal 1981;52:609-12.
5. Golub LM, McNamara TF, D'Angelo G, Greenwald RA, Ramamurthy NS. A non-antibacterial chemically modified tetracycline inhibits mammalian collagenase activity. J Dent Res 1987;66:1310-4.
6. Newman MG, Takei HH, Carranaza FA. Caraanza's clinical periodontology. 10th ed. Philedelphia: WB Saunders Co; 2006.
7. Naranjo CA, Busto U, Sellers EM, Sandor P, Ruiz I, Roberts EA, et al. A method for estimating the probability of adverse drug reactions. Clin Pharmacol Ther 1981; 30:239-45.
8. Granowitz EV, Brown RB. Adverse reactions to antibiotics. In: Cunha BA, editor. Infectious diseases in critical care medicine, 2nd ed. New York: Informa Healthcare USA, Inc; 2007. p.577.

****