

**ESOPHAGEAL ULCERATION ASSOCIATED WITH DOXYCYCLINE -  
A CASE REPORT**

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**Summary**

A 40-year old man was prescribed doxycycline 200 mg once daily for the symptoms of cough and mucopurulent sputum. The patient had retrosternal chest pain one hour after the fourth dose of doxycycline. The pain increased gradually and was radiating to the back. He also had difficult and painful swallowing. Barium swallow revealed longitudinal oriented barium pool with edematous margins on the walls of the mid-esophagus. The findings are suggestive of esophageal ulceration. He is a nonsmoker, non alcoholic and no history of aspirin or non-steroidal anti inflammatory drugs (NSAIDs) intake in the past one month. There is no history of any other concomitant medication. The therapy consisted of doxycycline withdrawal along with treatment with sucralfate, famotidine and liquid antacids. His symptoms gradually disappeared within 10 days. ). In light of the strong temporal relationship between taking the drugs and the onset of the esophageal ulceration and clinical recovery of the patient on stopping the drug we believe that the event could be due to doxycycline .The strength of association was examined using the “Naranjo’s Adverse drug Reaction Probability Scale”, in which a score of +7 was obtained suggesting a ‘probable’ link.

Key words: Antimicrobial , Adverse drug reaction, Doxycycline , esophageal ulceration.

Running head: Esophageal ulceration with Doxycycline.

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### **Introduction**

Doxycycline is a second generation extended spectrum tetracycline. The low cost, reduced toxicity and superior pharmacokinetic properties of doxycycline makes it the agent of choice among tetracycline's. In contrast to tetracycline, doxycycline is highly active against *S. pneumoniae*, *Hemophilus influenzae*, *Moraxella catarrhalis* and *legionella* (1,2).

### **Case Report**

A 40-year old man was prescribed doxycycline 200 mg once daily for the symptoms of cough and mucopurulent sputum. The patient had retrosternal chest pain one hour after the fourth dose of doxycycline. The pain increased gradually and was radiating to the back. He also had difficult and painful swallowing. In spite of taking famotidine 40 mg/day, liquid antacids he was able to take only liquids, and was admitted to the surgical unit on the seventh day a of his symptoms. The doxycycline was not taken after the fourth dose. Barium swallow revealed longitudinal oriented barium pool with edematous margins on the walls of the mid-esophagus. The findings are suggestive of esophageal ulceration (see figure 1). There is history of doxycycline intake by the patient just before going to sleep. Except for a few dyspeptic symptoms nothing is significant in his past medical history. He is a nonsmoker, non alcoholic and no history of aspirin or non-steroidal anti inflammatory drugs (NSAIDs) intake in the past one month. There is no history of any other concomitant medication. The therapy consisted of doxycycline withdrawal along with treatment with sucralfate, famotidine and liquid antacids. His symptoms gradually disappeared within 10 days. The patient was free of symptoms during the follow-up clinical examination after six weeks of discharge from the hospital. The patient's written informed consent has been taken to publish this report. The case was reported to the zonal centre under national pharmacovigilance programme.

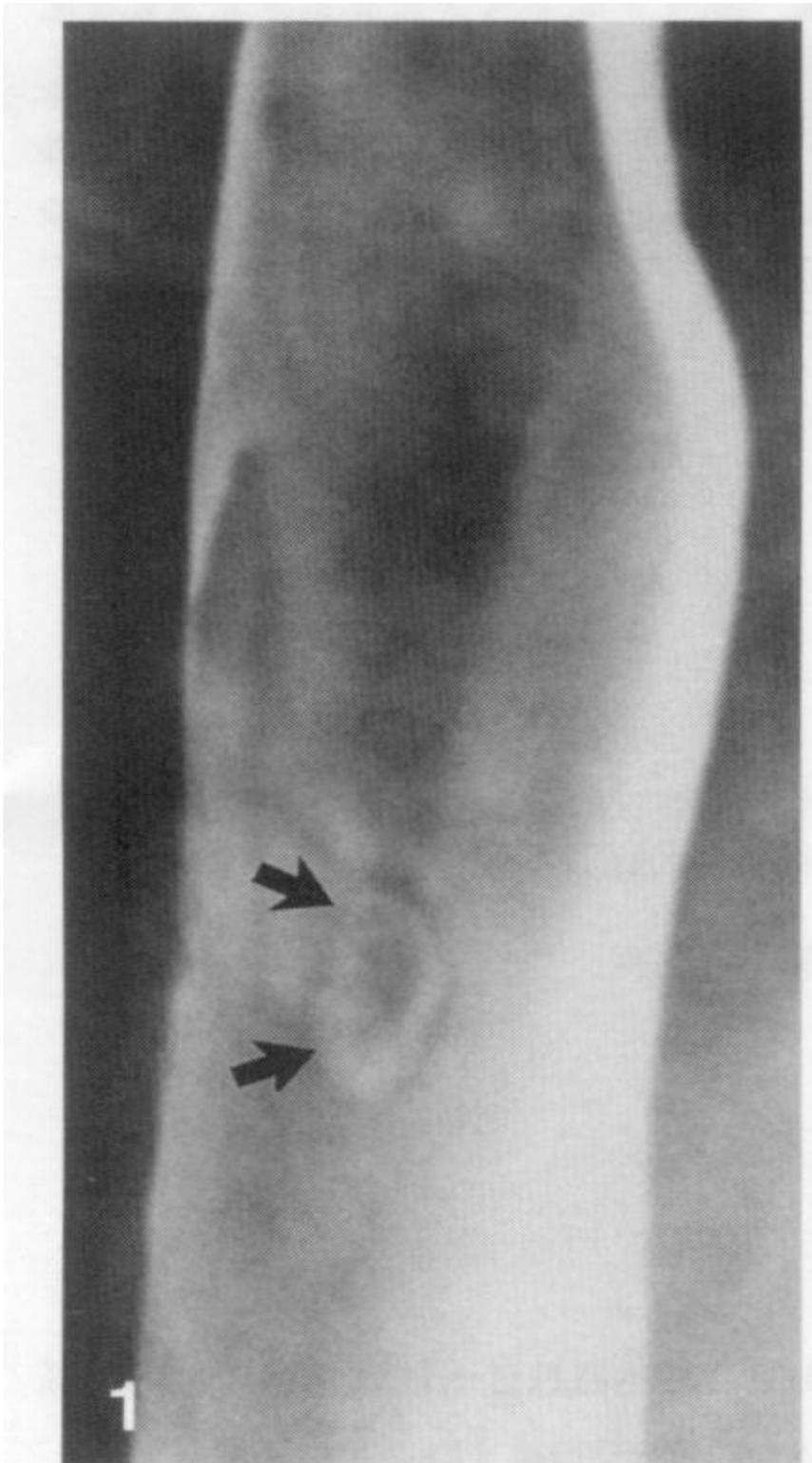


Fig 1- Drug induced esophagitis caused by doxycycline. A solitary ring like ulcer (arrow) is seen in mid esophagus due to barium coating rim of unfilled ulcer crater.

**Discussion**

An esophageal ulcer is defined as a discrete break in the esophageal mucosa with a clearly circumscribed margin. Gastro esophageal reflux disease ( GERD ) and drug ingestion are the two most common causes of esophageal ulcers (3). In light of the strong temporal relationship between taking the drugs and the onset of the esophageal ulceration and clinical recovery of the patient on stopping the drug we believe that the event could be due to doxycycline . The esophageal ulcer has also been reported previously with doxycycline and in general with the tetracycline's [4, 5]. Moreover, no previous history of gastroesophageal reflux disease, alcohol and NSAIDs intake also supports the diagnosis.

The limitation of the report is that no endoscopic examination and biopsy was performed to confirm the diagnosis (patient refused endoscopy). The strength of association was examined using the "Naranjo's Adverse drug Reaction Probability Scale", in which a score of +7 was obtained suggesting a 'probable' link. The Naranjo's algorithm defines adverse reactions as definite (score > 9), probable (score between 5-8), possible (1-4) and doubtful (< 1) [6]. The drug induced esophageal ulcer ( DIEU ) appears to be a preventable morbidity . Physicians must encourage their patients to take the drug in upright posture with liberal amounts of fluids well before retiring for the sleep and should have special attention to the elderly and those with any kind of esophageal disease. In a patient on doxycycline (or any tetracycline) presenting with retrosternal chest pain and painful swallowing DIEU is to be considered as differential diagnosis. A precise history and immediate radiological and endoscopic examination are most important in establishing the diagnosis of esophageal ulcer. In such cases the antibiotic should be discontinued and the patient is advised to take antacids and ulcer healing agents.

**References**

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