CASE REPORT

OESOPHAGEAL ULCERATION OF A YOUNG FEMALE PATIENT AFTER DOXYCYCLINE TREATMENT

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ABSTRACT

Doxycycline induced oesophageal ulcer constitute 27% of all drug induced oesophageal ulcers. Taking medication with inadequate water just before lying down is the main cause of the ulcer. In this study, an oesophageal ulcer developed after doxycycline treatment due to acne vulgaris is presented. 16-years-old female patient was administered to the clinic because of odynophagia and dysphagia. She had a medical history of treatment for acne vulgaris with orally administered doxycycline 2x100 mg for four days. Upper gastrointestinal endoscopy was performed and two ulcers in size of 2x1.5 cm and 3-4 mm in the oesophagus which is located 30 cm from the incisor teeth were seen. Result of the endoscopic biopsy of the larger ulcer was reported as benign ulcer. After the medical treatment, patient's signs and symptoms have disappeared completely in 4 days. Control endoscopy 1 month after medication revealed no pathology. Medications, especially doxycycline, should also be kept in mind as a cause of oesophageal ulcer, thus medication-use should be questioned while taking the patient's medical history. Endoscopy plays an important role in the diagnosis and the follow-up of the oesophageal ulcer. The treatment includes discontinuation of doxycycline and initiation of sucralfate. Proton pump inhibitors and prokinetic agents can be used as a supportive therapy. To prevent the development of the drug-induced oesophageal ulcer, medications should be taken with plenty of water and should not lie down shortly after drug intake.

Key Words: Oesophageal Ulcer; Doxycycline; Odynophagia

Introduction

Even though drug-induced oesophageal ulcer is a rare condition, variety of drugs are known to cause of oesophageal lesions. Doxycycline-induced oesophageal ulcer comprises 27% of all drug-induced ulcers.[1] Doxycycline acts directly on the oesophagus and causes mucosal damage. Taking medication with inadequate water just before lying down is the common cause of the ulcer in these cases.[2]

Case Report

16-years-old female patient was administered to the clinic because of odynophagia and dysphagia. The patient did not describe complaints such as nausea, vomiting, weight loss, hematemesis and the patient also declared that her dysphagia occurs only swallowing solid foods. The patient expressed that she did not have any gastrointestinal symptoms before. She had a medical history of treatment for acne vulgaris with orally administered doxycycline 2 x 100 mg for four days. She stated that she didn't used doxycycline after her complaints started at the 4th day of her treatment.

Figure-1: Ulcers (in size of 2 x 1.5 cm and 3-4 mm) in the oesophagus which is located 30 cm from the incisor teeth

Upper gastrointestinal endoscopy was performed as a diagnostic medical procedure and two ulcers (in size of 2

x 1.5 cm and 3-4 mm) in the oesophagus which is located 30 cm from the incisor teeth were seen (Figure 1). Endoscopic biopsy was performed from the large ulcer. The histopathology was revealed as benign ulcer. To prevent gastric acid reflux and to contribute to accelerate the healing process of the ulcers patient has been treated with sucralfate 1 g/ 5 ml suspension 3 times a day and pantoprazole 40 mg therapy once a day until the patient's symptoms are fully resolved. On the second day of the treatment patient's symptoms significantly revealed and have disappeared completely on the fourth day. Control endoscopy 1 month after medication revealed no pathology (Figure 2).

Figure-2: The oesophagus after medical therapy

Discussion

Drug-induced oesophageal ulcer is a very rare condition. Patients usually administered to the clinic with a sudden onset of heartburn, odynophagia and dysphagia at the first hour until the 10th day after the initiation of the treatment.[1,3] Most of the patients are young adults with no previous oesophageal dysfunction and usually antibiotics are the main reason for this situation and doxycycline is the prominent among these antibiotics.[1,4] Oesophageal ulcers also can be seen in elderly patients due to adhesion of various drugs to the oesophageal wall because of the changes in oesophageal motility and salivation.[3,5] Doxycycline is an acidic drug and due to its acidic nature it can cause a focal contact oesophagitis followed by oesophageal ulcers.[3,5] It also affects protein synthesis by accumulating in the basal membrane of the oesophageal cells.[3,6] Capsule form of doxycycline causes drug-induced oesophagitis more often than its tablet form, because capsules are tend to adhere to the wall of the oesophagus more than tablets.[7] Receiving the drug with inadequate amount of water and sleeping within a short time are the factors that facilitate the development of the oesophageal ulcer.[6] Receiving high-risk pharmaceutical drugs such as doxycycline with less amount of water causes a longer retention time in the oesophagus and facilitates the development of mucosal damage.[8] Also taking the drug just before sleeping, increases transit time within the oesophagus.[8] Disappearance of the effect of gravity in the supine position and decrease in salivation and swallowing during sleep causes prolonged esophageal retention time.[8] In this case, the patient stated that she also slept shortly after taking the evening dose of her treatment.

The most sensitive method for the diagnosis is upper gastrointestinal endoscopy.[9] The severity of the lesions can be assessed and biopsy can be performed to make further possible differential diagnosis of the lesions via endoscopy.[9] The first thing to do as a treatment is to stop the doxycycline treatment.[10] Proton pump inhibitors and H2 receptor antagonists can prevent the increase of the severity of oesophageal ulcer caused by exposure to the acidic gastric content secondary to gastroesophageal reflux by reducing the acid secretion.[10] But these drugs have no direct role in the healing of oesophageal ulcers. Besides Sucralfate acts through adhesion to the surface and is reported to be the most effective drug therapy.[10] Likewise in our case the patient was treated with Proton pump inhibitor and Sucralfate to provide a rapid healing process.

Conclusion

In conclusion, by taking a good medical history of the patient including questioning the medication and using a proper diagnostic procedure, like endoscopy, makes it easier to reach to correct diagnosis. Sucralfate is an effective choice for medical treatment, whereas proton pump inhibitors and H2 receptor antagonists can be used as a supportive treatment. Also taking into consideration that primary prevention from drug-induced oesophageal ulcer caused by doxycycline is as important as treatment. Thus, as a precaution, taking medicine with plenty of water and lying down in a supine position at least an hour later can prevent the development of drug-induced oesophageal ulcer in young patients.

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