

# An unusual presentation of cobblestone esophagus from bisphosphonate use

Tian Yu Qiu<sup>1</sup>, Yi Yuan Tan<sup>1</sup>, Nicholas Chin Hock Tee<sup>1</sup>, and Rajesh R<sup>1</sup>

<sup>1</sup>Singapore General Hospital

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## Introduction

Cobblestone esophagus is a rare finding that has been previously described in cases of eosinophilic esophagitis (EoE), candidiasis, barrett's esophagus or severe reflux esophagitis from distal gastrointestinal obstruction<sup>1-4</sup>. We describe an unusual case of asymptomatic cobblestone esophagus secondary to bisphosphonate use.

## Case summary

### (a) Clinical situation

A 67 years old female presented to our outpatient clinic for evaluation of microcytic anemia that was incidentally picked up on routine chronic disease follow-up. Her past medical history include hypertension, type 2 diabetes mellitus, hypothyroidism and osteoporosis. She was asymptomatic; in particular she did not have any dysphagia, odynophagia or reflux symptoms. She was started on oral alendronate 70mg once a week a year ago when she was diagnosed with osteoporosis after a compression fracture. Her other medications included telmisartan 80mg OM, iron polymaltose 100mg OM, cholecalciferol capsule 2000u OM and amlodipine 7.mg OM.

### (b) Course of events

She was initially only keen for non-invasive tests hence a barium meal was performed, which showed a diffuse “cobblestone” appearance but no stricture or significant gastro-esophageal reflux. She subsequently agreed for oesophago-gastro-duodenoscopy (OGD), which showed diffused white nodular lesions along esophagus starting from oropharynx with cobblestone appearance, but no ulcer or mass noted. (Fig. 1) Segmental esophageal biopsies were negative for fungal stain and did not show any pathology. In the absence of infection, eosinophilic esophagitis and dysplasia, her “Cobblestone” esophagus was attributed to bisphosphate use, hence alendronate acid was held off.

### (c) Clinical resolution

She underwent serial barium meal over the next 1 year with significant interval improvement. (Fig. 2)

## Discussion

Cobblestone esophagus is an uncommon finding on endoscopy that has been associated with conditions like EoE and candidiasis but these causes were excluded in our patient during endoscopy and biopsy. By diagnosis of exclusion, alendronate acid use was deemed the most likely cause of this patient's cobblestone esophagus although there is no similar case reported before in literature.

Bisphosphonates, such as alendronate acid, are commonly associated with drug induced esophagitis<sup>5</sup> and can cause esophageal irritation by breaching the protective hydrophobic mucosal lining<sup>6-7</sup>. The cobblestone pattern observed during barium meal and endoscopy is a result of inflammation and edema of the lamina

propria and submucosal layers overtime<sup>8</sup>. The mainstay of treatment for drug induced esophagitis is cessation of the offending medication<sup>9</sup>. There was indeed significant interval improvement in serial barium meal in our patient upon cessation of alendronate acid. This underscores the importance of reviewing medication list when encountering patients exhibiting cobblestone esophagus, in addition to ruling out the known underlying causes mentioned earlier.

The clinical challenge of this case lies in its atypical asymptomatic presentation of drug induced esophagitis. Patients with drug induced esophagitis frequently complain of symptoms such as retrosternal chest pain which happens in about 70% of the patients, as well as odynophagia and dysphagia<sup>9</sup>. In our patient, it was first picked up incidentally on barium meal as part of anemia workup before confirming it with endoscopy. With this in mind, it is important to counsel our patients on the correct administration of bisphosphonate<sup>10</sup> so as to minimize upper gastrointestinal adverse effect that may initially be asymptomatic and delay timely action before long term side effects are made.

## Conclusion

The finding of cobblestone esophagus should prompt physician to investigate for an underlying etiology. In addition to performing endoscopy and biopsies to exclude common etiologies, this case shows us the importance of taking a comprehensive drug history. Patients with drug induced esophagitis may be asymptomatic initially. It is an easily reversible etiology that should be routinely considered for prompt intervention against irreversible damage to the upper gastrointestinal tract.

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