

Schatzki's ring

An unusual clinical and radiological presentation

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ABSTRACT

Schatzki's ring is a lower esophageal mucosal ring associated with a small sliding hiatus hernia. Most investigators described it as either an asymptomatic or symptomatic entity with chronic recurrent presentation of dysphagia. Barium swallow study in patients with Schatzki's ring was described as a thin smooth circumferential constriction at the GE junction. This case report describes an unusual clinical and radiological presentation in a patient with Schatzki's ring. Our adult male patient experienced sudden dysphagia, followed by spontaneous relief after an interval of 12 hours without specific treatment. Radiological findings were highly suggestive of lower esophageal malignancy. However, this possibility could be excluded by upper endoscopy and histopathological examination of biopsies taken from the lesion. The condition was diagnosed as Schatzki's ring with unusual clinical and radiological presentation.

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Schatzki's ring is a lower esophageal mucosal ring associated with a small sliding hiatus hernia.^{1,2} Most investigators described it as either asymptomatic or symptomatic entity with chronic and recurrent presentation of dysphagia.³ The incidence of symptomatic Schatzki's ring is reported to be approximately 0.5% in patients undergoing routine upper gastrointestinal (GI) barium examination.⁴ In barium swallow study, Schatzki's ring is described as a thin smooth circumferential constriction at the gastroesophageal (GE) junction. We are reporting a case of Schatzki's ring presented with unusual clinical and radiological manifestations that closely mimicked lower esophageal carcinoma. This case report pays attention to the importance of full investigations and close follow up of patients with Schatzki's ring to exclude the possibility of esophageal malignancy.

Case Report. A 58-year-old, American male presented with sudden and complete dysphagia, which was followed by spontaneous relief after an interval of 12 hours. This was a single episodic presentation by the patient. Dysphagia did not follow a particular type of solid food intake such as meat. Also, patient did not have any associated abdominal, thoracic or constitutional symptoms. Clinical examination of the patient was unremarkable. Barium swallow was carried out shortly after presentation and this showed complete obstruction at the lower end of esophagus with an irregular filling defect and shouldering sign (Figures 1 & 2). These findings were highly suggestive of lower esophageal malignancy. The patient was admitted, received no specific treatment but was put under observation and was given intravenous fluids and nothing by mouth. Twelve

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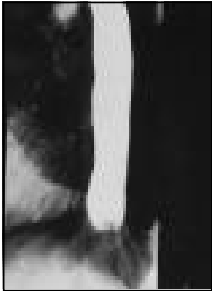


Figure 1 - Barium swallow showing complete arrest of the dye at the esophago-gastric junction and irregular filling defect.

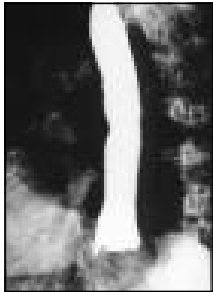


Figure 2 - Barium swallow showing shouldering sign at the esophago-gastric junction which mimics carcinoma of the lower esophagus.

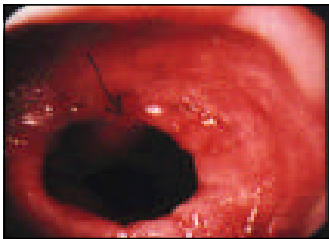


Figure 3 - Esophagogastroscopy showing constricting ring at the esophago-gastric junction with a tiny ulcer over its crater.

hours following admission, the patient experienced spontaneous and complete relief of dysphagia. Follow-up radiological exposure was taken after relief of dysphagia revealed free passage of barium through the esophago-gastric junction into the stomach. The next day of hospitalization, an esophagogastroscopy was performed which did not show any evidence of tumor mass, instead, it showed a constricting ring at the lower end of oesophagus accompanied by a sliding hiatus hernia, and a tiny ulcer over the crater of the ring (**Figure 3**); signs suggestive of gastro-esophageal reflux disease (GORD). Biopsies taken from the lesion site for histopathological examination revealed no signs of malignancy. The case was diagnosed as Schatzki's ring of lower end of esophagus. The patient was discharged on the second day of admission free and was given omeprazole for treatment of GORD and lower esophageal ulcer. Follow up of the patient for about one year did not report any recurrence of the symptoms or abnormal radiological or endoscopic findings.

Discussion. Schatzki's ring was first described in literature by Schatzki and Gary in 1953.⁵ The exact pathogenesis of these rings is unknown. Most investigators believe that Schatzki's ring is an annular ring-like stricture caused by scarring as a result of reflux esophagitis.^{4,6} The luminal diameter of mucosal ring is the primary factor that determines the presence or absence of dysphagia.⁷ In 1963, Schatzki reported that if the luminal diameter of ring is less than 13 mm, patients regularly experience intermittent dysphagia to solid food.⁸ Some patients may present with acute food impaction causing an obstruction. It occurs that a large piece of meat becomes stuck at the level of ring, hence the term steakhouse syndrome. On the other hand, the clinical course of Schatzki's ring shows that if the patient passes or regurgitates the food bolus the symptoms resolve. Perforation of esophagus is an extremely rare, but important complication of Schatzki's ring and occurs after meat impaction with only one such case reported until date.⁹ There is no age bar for the development of Schatzki's ring and it can also present in children.¹⁰ In our case, patient did not give history of specific type of solid food intake shortly before development of dysphagia. Also, he had a complete relief of dysphagia without regurgitation of food. Thus, the patient did not receive any of specific treatment for Schatzki's ring but only for the associated GE reflux and the tiny ulcer at lower end of the esophagus. Barium swallow study in patients with Schatzki's ring at the time of dysphagia is expecting to show a thin smooth circumferential constriction at the GE junction.⁵ In our case we

describe a rare radiological presentation of episodic Schatzki's ring in which barium swallow findings closely mimicked lower esophageal malignancy regarding the presence of irregular filling defect and shouldering sign. However, endoscopy and histopathological examination of tissues taken from the site of lesion excluded malignancy. There is no reported evidence of association of Schatzki's ring and esophageal malignancy.⁷ Generally, treatment of Schatzki's ring is offered only in the symptomatic group of patients and the choices of treatment include dilatation and rupture of ring or excision of ring with repair of hiatus hernia. The recurrence rate of symptoms is considerably high after dilatation. On the other hand, surgical option is reserved only for patients with reflux as predominant complaint rather than dysphagia with the realization that there will be a sizable failure rate. Radiological and endoscopic follow up of our patient for one year did not show recurrence of symptoms and even the ulcer in the lower esophagus healed completely.

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References

1. Chapman AH. The salivary glands, pharynx and esophagus. In: Sutton D, editor. Textbook of radiology and imaging. New York, Edinburgh, London, Madrid: Churchill Livingstone; 1998. p. 803-804.
2. Hendrix TR. Schatzki ring, epithelial junction and hiatus hernia: An unresolved controversy. *Gastroenterology* 1980; 79: 584-585.
3. Zaveri JP, Nathani RR, Shah RL. Schatzki's ring: An obscure cause of dysphagia (case report). *J Post Grad Med* 1987; 33: 99-101.
4. Johnson AC, Lester PD, Johnson S, Sudarsanam D, Dunn D. Oesophagogastric ring: why and when we see it, and what it implies: a radiologic-pathologic correlation. *South Med J* 1992; 85: 946-952.
5. Schatzki R, Gary JE. Dysphagia due to diaphragm-like localized narrowing in the lower esophagus (lower esophageal ring). *Am J Roentgenol* 1953; 70: 911-922.
6. Bugden WF, Delmonico JE Jr. Lower esophageal Web. *J Thorac Surg* 1956; 31: 1-18.
7. Marshall JB, Kretschmar JM, Diaz-Arias AA. Gastroesophageal reflux as a pathogenic factor in the development of symptomatic lower esophageal rings. *Arch Inter Med* 1990; 150: 1669-1672.
8. Schatzki R. The lower esophageal ring: Long-term follow up of symptomatic and asymptomatic rings. *Am J Roentgenol Radium Ther Nucl Med* 1963; 90: 805-810.
9. Buckley K, Buonomo C, Husain K, Nurko S. Schatzki ring in children and young adults: clinical and radiological findings. *Pediatr Radiol* 1998; 28: 884-886.
10. Miller S, Hines C Jr, Ochsner JL. Spontaneous perforation of the esophagus associated with a lower esophageal ring. *Am J Gastroenterol* 1988; 83: 1405-1408.