

# Cardiovascular Dysphagia as A Rare Symptom of Left Atrial Enlargement: A Case Report

Anduquia-Garay Felipe<sup>2\*</sup> | Santa Gil Valentina<sup>1</sup> | Márquez Parra Paydieg Nathalia<sup>2</sup> | Cardona Rios Yesica<sup>2</sup> | Borraez-Segura Bernardo<sup>1</sup>

**\*Correspondence:** Anduquia-Garay Felipe

**Address:** <sup>1</sup>Liga contra el Cáncer Pereira, Risaralda Colombia, Colombia; <sup>2</sup>Universidad Tecnológica de Pereira, Colombia

**E-mail** ✉: [felipe.anduquia@utp.edu.co](mailto:felipe.anduquia@utp.edu.co)

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## ABSTRACT

Cardiovascular dysphagia is that which is due to luminal obstruction from extrinsic cardiovascular compression of the esophagus (anomalous left subclavian artery, double aortic arch, right aortic arch, cervical aortic arch, Kommerell's diverticulum, ligamentum arteriosum, aortic aneurysm or dissection, aorto-oesophageal fistula, post-cardiovascular and left atrial dilatation). The diagnosis is frequently suggested by radiographic findings as a barium swallow, and supported by endoscopic and echocardiographic findings. This article presents a 73-year-old woman with progressive dysphagia and enlarged left atrium secondary to mitral valvulopathy and rheumatic fever.

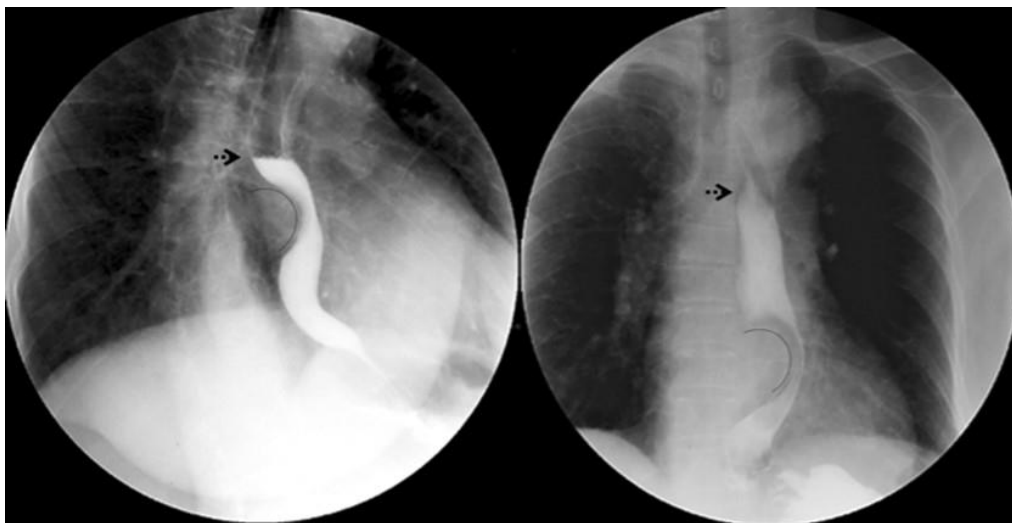
**Keywords:** *Dysphagia, Esophagus, Cardiac Hypertrophy, Endoscopic*

## Case Presentation

A 73-year-old female patient with a history of rheumatic fever in childhood, smoking, diabetes mellitus, and hyperlipidemia was admitted to the emergency department with dyspnea and chest pain symptoms. She had associated weight loss secondary to progressive dysphagia. On admission, vital signs were a blood pressure of 130/80 mmHg and a pulse of 108/min. Physical examination revealed a mitral murmur and S1-S2 irregular heart sound. Transoesophageal echocardiogram showed dilated left atria, anterior-posterior diameter measures 62 mm, and severe mitral stenosis with a valve area of 0.75 cm. In addition, upper gastrointestinal endoscopy was noted for a narrowing of the lumen at 27 cm from the incisor teeth (Fig. 1). A barium swallow X-ray revealed an extrinsic compression at the middle third of the esophagus due to dilation of the left atrium (Fig. 2). During her hospital stay, an esophageal stent was placed to keep esophageal dilation, reducing the symptoms.



**Figure 1:** Upper gastrointestinal endoscopy with narrowing of the lumen at 27 cm from the incisor teeth.



**Figure 2:** Barium swallow X-ray revealed a narrowing at the middle third of the esophagus.

## Discussion

Cardiovascular dysphagia, associated with congenital or acquired arterial, venous, or cardiac abnormalities, is a rare cause of dysphagia. The most common arterial abnormalities are dysphagia lusoria, usually due to an aberrant right subclavian artery that passes posterior to the esophagus, resulting in esophageal compression and dysphagia, and Kommerell diverticulum. It has been described as dilatation of a base aberrant right subclavian artery or vascular ring abnormalities like a double aortic arch or right aortic arch.

Often, the acquired arterial abnormalities of arterial hypertension are aortic aneurysm, aortic dissection, and aortic-esophageal fistula. Aneurysm of the azygos vein arch is the principal cause of cardiovascular dysphagia of venous origin, secondary to hypervolemia as in congestive heart disease, thrombosis, or cirrhosis. However, this is less frequent (Polguj *et al.*, 2014; Morton *et al.*, 2021).

Among the most described causes of cardiovascular dysphagia are left atrial enlargement, attributable to damage of the mitral valve in chronic rheumatic disease and atrial fibrillation. It produced a progressive rise in pressure in the left atrium and volume overload, which generated left atrial dilatation (Gajanana *et al.*, 2016), creating extrinsic compression of the esophagus, which can be manifest with dysphagia (Mouawad and Ahluwalia, 2017).

The patient had mitral stenosis associated with her history of rheumatic fever, and systemic inflammatory disease, which chronically affects the heart and its valves as a consequence of streptococcal infection of the upper respiratory tract (Guilherme *et al.*, 2007). Upper gastrointestinal endoscopy, barium swallow X-ray, and transoesophageal echocardiogram were required to diagnose growth to the left atrium with mitral stenosis. This generated an extrinsic compression of the esophagus, and symptoms of dysphagia in the patient improved with esophageal dilation.

It is possible to consider a nuclear magnetic resonance or computed axial tomography for determining the size and the spatial relations of the left atrium with neighboring organs such as the esophagus (Gajanana *et al.*, 2016). Endoscopic dilation and an esophageal stent improve esophageal strictures, and surgical management of left atrium and cardiac valves are just for patients with symptomatic left atrial myxoma and giant left atrium secondary to mitral valve disease (Balaban *et al.*, 2019). Finally, the limitation in the case was the difficulty accessing some hospitals for diagnostic studies, such as nuclear magnetic resonance, which is of choice (Gajanana *et al.*, 2016).

Cardiovascular dysphagia is a symptom caused by a wide variety of diseases that range from congenital to acquired disorders with ages of presentations in both extremes of life and frequently associated with cardiovascular symptoms, diagnosis is suggested by the history and a barium swallow, and echocardiogram, magnetic resonance and CT scan clarify the diagnosis. treatment of cardiovascular dysphagia change depends on the patient, but in our case, we decide on expectant treatment due to age and comorbidities. (Ruiz-Serrato *et al.*, 2015; Mendes *et al.*, 2013; Ferreira *et al.*, 2008)

## Conclusion

Even do we know cardiovascular dysphagia is an uncommon disorder, it should be considered a differential diagnosis in patients with a history of rheumatic fever and mitral valve disease, predominantly in females.

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