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CASE REPORT
Heart failure

Dysphagia as an early sign of cardiac decompensation in elderly: case report

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Background Several clinical entities may be misdiagnosed in elderly if we consider dysphagia as a normal aging process in our daily practice. On top of usual aetiologies like motor dysfunction, investigations may uncover serious underlying conditions.

Case summary We report an unusual case where dysphagia was the warning sign for acute heart failure in a 76-year-old patient known to have dilated cardiomyopathy with reduced ejection fraction. It was due to an external oesophageal compression by the left atrium. A transthoracic echocardiography, an enhanced thoracic computed tomography-scan and esophagogastroduodenoscopy were used for the diagnosis. Diuretics were the cornerstone treatment with symptomatic improvement.

Discussion Despite the fact that cardiovascular dysphagia is an uncommon medical entity, but it remains a potential differential diagnosis, especially in elderlies with high risk for atrial enlargement.

Keywords Cardiovascular dysphagia • Left atrium • Dysphagia • Compression • Case report

Learning points

- Dysphagia is a common sign among elderly requiring investigations because it may uncover unusual and serious conditions such as cardiovascular dysphagia.
- Dysphagia is a simple sign that may allow to avoid an upcoming deleterious event like heart decompensation.
- For anatomical reasons, physicians must keep in mind the clinical entity of cardiovascular dysphagia in presence of left atrial enlargement.

Introduction

The definition of dysphagia is difficulty in swallowing or the sensation of obstruction during the passage of liquid or solid through the pharynx or oesophagus.[1] It is classified into oropharyngeal dysphagia (problem with swallowing) and into oesophageal dysphagia (problem in transporting food along the oesophagus).[2] It is a common complaint among older individuals. There is a wide spectrum of aetiologies varying from gastro-intestinal to cardiovascular disease. Overall, aetiologies could be divided into two categories: motor dysfunction and mechanical obstruction.[2] Indeed, cardiovascular dysphagia signalling an external oesophageal compression via cardiac structure such as atria or aorta is a clinical entity described in literature, but rarely encountered in our daily practice. Thus, we report a case of dilated left atrium compressing the oesophagus during episodes of cardiac decompensation and representing an alarming sign to predict acute heart failure.

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Timeline

Day 0 (at admission)	Patient known to have ischaemic dilated cardiomyopathy with reduced ejection fraction was presented for solid food dysphagia progressing to liquid afterwards.
	Transthoracic echocardiogram showed an enlarged left atrium and left ventricular ejection fraction at 30%.
Day 1	Oesophago-gastro-duodenoscopy performed was normal.
	A detailed history taken highlights that dysphagia is almost always followed by dyspnoea which both resolve after diuretics administration.
Day 2	Enhanced chest computed tomography revealed a giant left atrium displacing posteriorly the middle oesophageal portion with signs of external compression.
	The diagnosis of 'Atrial or cardiovascular dysphagia' when an enlarged atrium expands in size during heart decompensation compressing the oesophagus was confirmed.
	After a multidisciplinary decision, we performed a conservative approach and we advised the patient to increase the dose of loops diuretics when dysphagia appears.
Two months	Patient is clinically euvolaemic and no hospitalization for cardiac decompensation was documented.
	He noted an episode of dysphagia which was improved after taking 80 mg of furosemide for two consecutive days.

Case presentation

A 76-year-old man was admitted for several episodes of solid food dysphagia progressing to liquids afterwards. The patient is known to have dilated cardiomyopathy with reduced ejection fraction and coronary artery disease with left anterior descending artery angioplasty. His list of medications includes: aspirin 100 mg, ramipril 5 mg, bisoprolol 5 mg, atorvastatin 40 mg, furosemide 80 mg, and spironolactone 25 mg. Physical exam was unremarkable for cardio-pulmonary and gastro-intestinal findings. Chest X-ray showed cardiomegaly. The patient's resting 12-lead electrocardiogram showed sinus rhythm with no ischaemic signs. Transthoracic echocardiogram (TTE) showed a dilated left ventricle with severe systolic dysfunction at 30% of ejection fraction associated to diffuse hypokinaesia, an enlarged left atrium with indexed volume 53 mL/m^2, 80-mm longitudinal diameter and 43-mm transverse diameter, and moderate to severe mitral regurgitation (*Figure 1*). In collaboration with gastroenterologist, oesophagogastroduodenoscopy was done returning normal without evidence of gastro-intestinal abnormalities (*Figure 2*). After a detailed history taking, the patient mentions that dysphagia starting since 11 months is almost always followed by dyspnoea for 1 or 2 days and it resolves spontaneously after administration of diuretic. This happens in each past hospital admissions for volume overload triggered by acute heart failure requiring diuretic dosage adjustment. Afterwards, searching for a mechanical obstruction, we perform an enhanced chest computed tomography that revealed a giant left atrium with an antero-posterior diameter of 81 mm and transverse diameter of 45 mm displacing posteriorly the middle oesophageal portion with signs of external compression (*Figure 3*). The diagnosis of 'atrial dysphagia' involving the concept of an enlarged left atrium expanding in size via an increased volume and pressure of cardiac cavities during the episodes of cardiac decompensation compressing the adjacent oesophagus and resulting in dysphagia was confirmed. This dysphagia fades after each course of diuretics probably related to

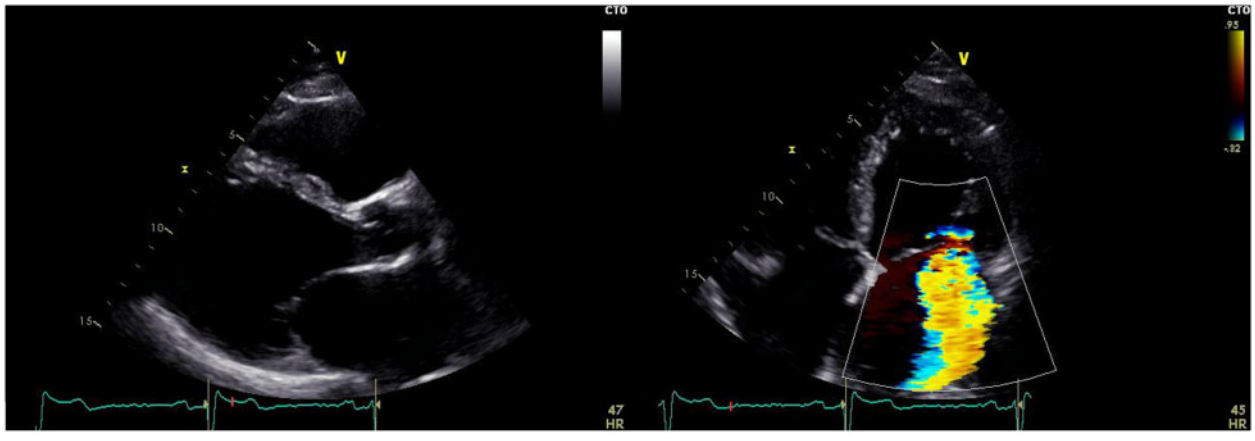

Figure 1 Transthorcic echocardiography showing a dilated left atrium and left ventricle with mitral regurgitation.

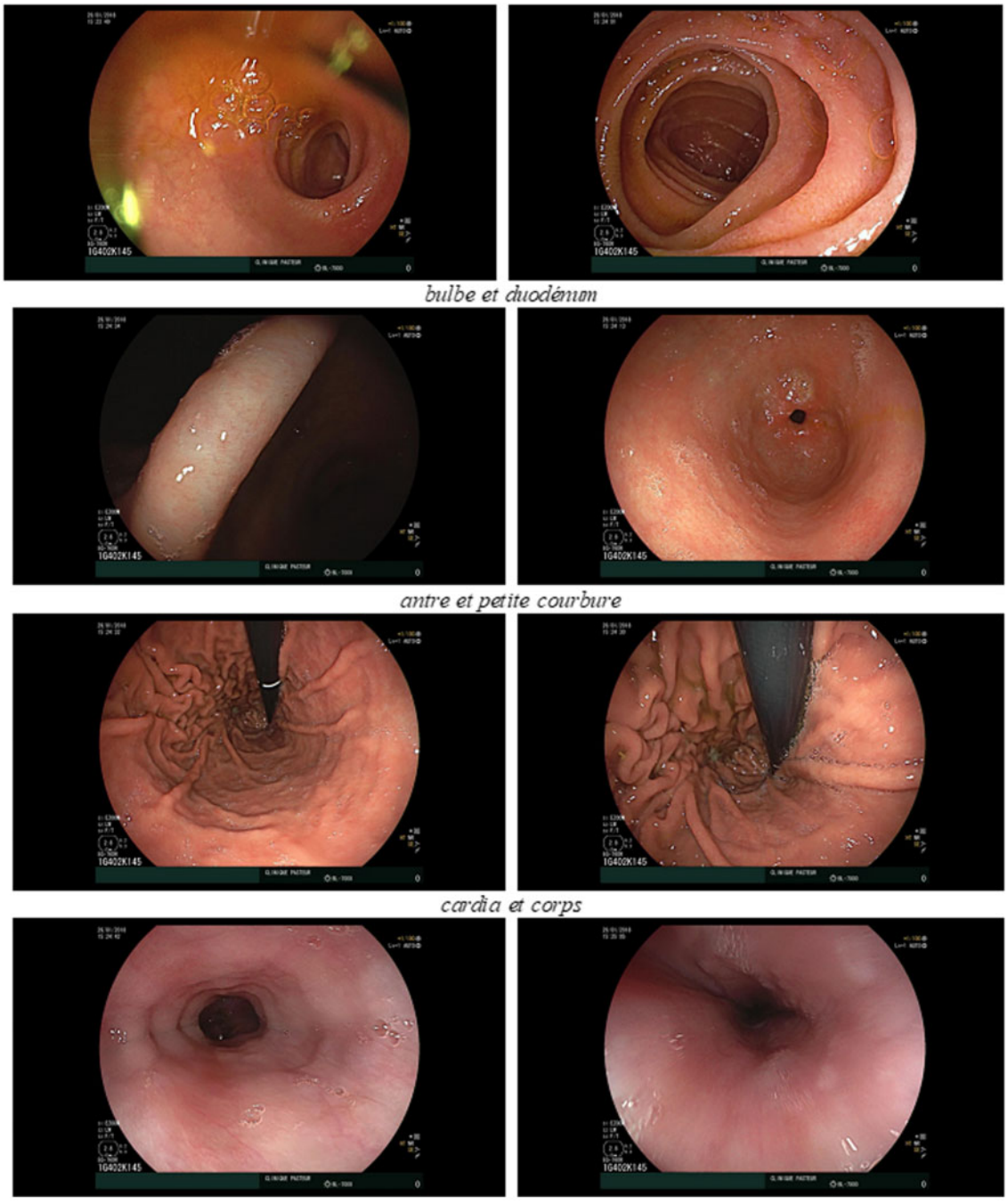

Figure 2 Esophagogastroduodenoscopy revealing a normal oesophagus passage.

reduction in left atrium size following volume depletion. After a multidisciplinary decision, we performed a conservative therapeutic approach avoiding surgical atriotomy and we advised the patient to increase the dose of loop diuretics when dysphagia appears. At 2 months following hospital discharge, the patient was clinically euvolaemic and no hospitalization for cardiac decompensation was documented. He noted an episode of dysphagia which was improved after taking an extra 80 mg of furosemide for two consecutive days.

Discussion

Currently, dysphagia is more commonly observed for several contributing risk factors such as increased life expectancy, prevalence of obesity, and gastroesophageal reflux disease.[1] Actually dysphagia in old age is a serious complaint that required investigations, and in some circumstances, it is correlated to neurological dysfunction resulting from cerebral atrophy related to aging process which consequently may alter the oesophageal peristalsis.[2,3]

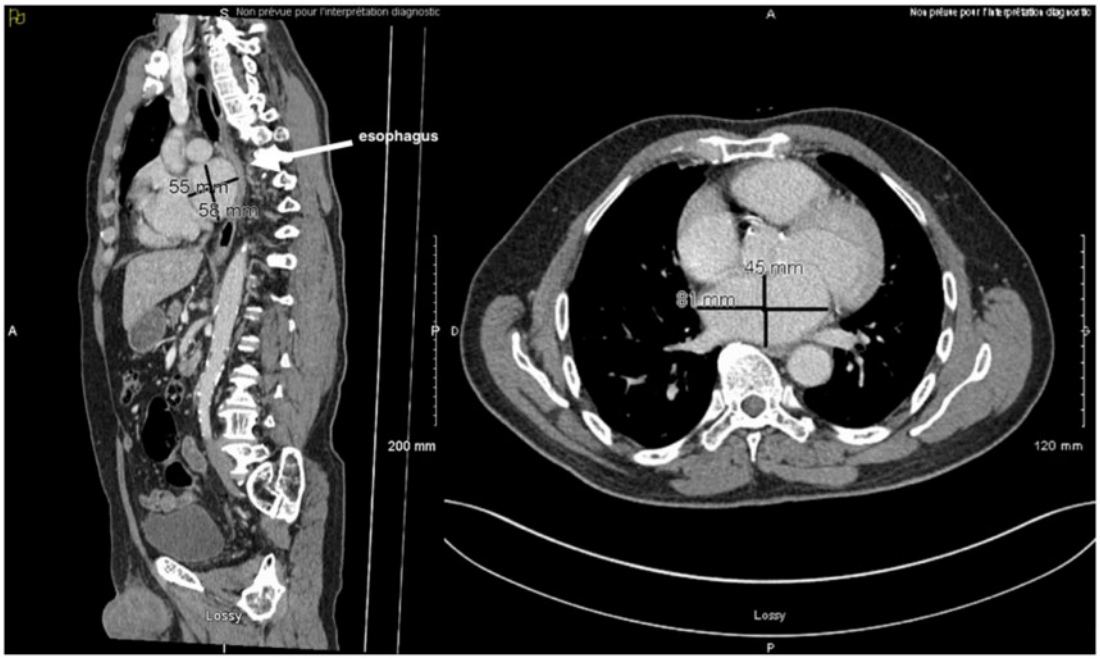

Figure 3 Enhanced chest computed tomography showing an enlarged left atrium compressing and displacing posteriorly the middle oesophagus part.

However, the oesophagus is highly predisposed for extrinsic compression for its anatomical location and proximity to several adjacent organs pointing out the fact that adjacent structures diseases can adversely affect the oesophageal passage. A case of 'Dysphagia Aortica' and 'Cardiovascular dysphagia' when the oesophagus was compressed either by the aorta or neither by the left atrium like our reported case were described in literature.[4,5] Otherwise, cardiovocal syndrome also known as Ortner's syndrome is referred to laryngeal nerve paralysis induced by cardiovascular pathology. According to Piccoli *et al.*, a left atrial anteroposterior diameter above 8 cm on TTE defined a giant left atrium.[4] In the past, significant mitral stenosis leads to constant pressure overload of the left atrium that may result in a massive left atrial enlargement and dysphagia. Almost always, rheumatic heart disease is considered the main cause of mitral stenosis. Moreover, it could alter the intrinsic characteristics of the left atrial wall producing a left atrial remodelling and enlargement.[5]

In addition to report an uncommon case of cardiovascular dysphagia, we emphasize on the importance of a detailed careful history taking for dysphagia that constitutes in our case an interesting predictor for an upcoming episode of acute heart decompensation permitting to establish an early appropriate adjustment of diuretics dose, and avoiding further hospitalizations in the future.

Cardiovascular dysphagia is an uncommon clinical entity that is often missed. Anatomically, the left atrium is located in front of the oesophagus. As such, left atrial enlargement is a potential cause of dysphagia by mechanical compression especially when fluid overload in decompensated heart failure leads to LA dilation.

Conclusion

Dysphagia is a common complaint in elderly patients but it may reveal an unusual clinical entity such as cardiovascular dysphagia. A detailed history taking remains the cornerstone for a pertinent diagnosis and physicians must never forget that a simple symptom may be a predictor to prevent more serious situations.

Lead author biography

Dr Anthony Matta was born on 19 July 1990, Jbeil-Lebanon. He obtained Doctorate of Medicine of Holy Spirit University of Kaslik in 2016. He was a former cardiology resident at Notre Dame de Secours-University Hospital. He is an Interventional and structura cardiology fellow in CHU-Rangueil, Toulouse-France.

Supplementary material

Supplementary material is available at *European Heart Journal - Case Reports* online.

Slide sets: A fully edited slide set detailing this case and suitable for local presentation is available online as Supplementary data.

Consent: The authors confirm that written consent for submission and publication of this case report including images and associated text has been obtained from the patient in line with COPE guidance.

Conflict of interest: none declared.

References

1. Mouawad N, Ahluwalia G. Dysphagia in the aging cardiovascular patient. *J Thorac Dis* 2017;**9**:1005–1008.
2. Lindgren S, Janzon L. Prevalence of swallowing complaints and clinical findings among 50-79-year-old men and women in an urban population. *Dysphagia* 1991;**6**: 187–192.
3. Wilkinson JM, Euinton HA, Smith LF, Bull MJ, Thorpe JA. Diagnostic dilemmas in dysphagia aortica. *Eur J Cardiothorac Surg* 1997;**11**:222–227.
4. Piccoli GP, Massini C, Di Eusanio G, Ballerini L, Tacobone G, Soro A et al. Giant left atrium and mitral valve disease: early and late results of surgical treatment in 40 cases. *J Cardiovasc Surg* 1984;**25**:328–336.
5. John B, Stiles MK, Kuklik P, Chandy ST, Young GD, Mackenzie L et al. Electrical remodeling of the left and right atria due to rheumatic mitral stenosis. *Eur Heart J* 2008;**29**:2234–2243.