

# Arteria Lusoria: A rare cause of chronic dysphagia

Domoina Hasina Laingonirina<sup>1</sup>, Andry Rakotozafindrabe<sup>1</sup>, Chantelli Razafindrazoto<sup>1</sup>, Lova Rajaonarison<sup>1</sup>, Nitah Randramifidy<sup>1</sup>, Tovo Rabenjanahary<sup>1</sup>, Soloniaina Razafimahefa<sup>2</sup>, and Rado Ramanampamonjy<sup>1</sup>

<sup>1</sup>University of Antananarivo

<sup>2</sup>University of Fianarantsoa

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## Abstract

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## Arteria lusoria: A rare cause of chronic dysphagia

Domoina Harivonjy Hasina Laingonirina<sup>1, \*</sup>, Andry Lalaina Rinà Rakotozafindrabe<sup>1</sup>, Chantelli Iamblaudiot Razafindrazoto<sup>1</sup>, Lova Hasina Ny Ony Narindra Rajaonarison<sup>2</sup>, Nitah Harivonjy Randriamifidy<sup>1</sup>, Tovo Harimanana Rabenjanahary<sup>1</sup>, Soloniaina Hélio Razafimahefa<sup>3</sup>, Rado Manitrana Ramanampamonjy<sup>1</sup>

1. Department of Gastroenterology, University Hospital Joseph Raseta Befelatanana, Antananarivo, Madagascar
2. Department of Radiology, University Hospital Joseph Ravoahangy Andrianavalona, Antananarivo, Madagascar
3. Department of Hepato-Gastroenterology, University Hospital Andrainjato, Fianarantsoa, Madagascar

## \*Correspondence

Domoina Harivonjy Hasina Laingonirina, Department of Gastroenterology, University Hospital Joseph Raseta Befelatanana, Antananarivo, Madagascar

E-mail: toavinjanahary@gmail.com

## Abstract

Arteria lusoria is a rare vascular malformation. It remains a rare cause of dysphagia and should be considered in the presence of any dysphagia unexplained by the usual endoscopic and radiological examinations.

**KEYWORDS :** Dysphagia lusoria, Aberrant right subclavian artery

## Key clinical messages

Arteria lusoria is a rare cause of dysphagia, which should be considered in the presence of any dysphagia unexplained by the usual endoscopic and radiological examinations.

## INTRODUCTION

Dysphagia lusoria is a swallowing disorder due to extrinsic compression of the esophagus by the aberrant right subclavian artery or arteria lusoria.<sup>1</sup> It is the most frequent vascular malformation with an incidence of 0.4% to 2%.<sup>2</sup> Its relationship with dysphagia is rarely described. Our objective is to report the case of

a 70-year-old female patient with chronic dysphagia secondary to an aberrant right subclavian artery or dysphagia lusoria.

## CASE REPORT

A 70-year-old woman presented to a consultation for dysphagia evolving for more than 10 years, mainly on solid foods. There was no obvious blockage on swallowing. The general condition was still preserved. Moreover, the dysphagia was associated with spontaneous chest pain, which was favored by swallowing. There was no vomiting or transit disorder. The patient had a history of intestinal amoebiasis treated in 2010 and chronic smoking weaned in 2014 (10 pack-years). There was no personal history of alcoholism or family history of systemic disease.

On clinical examination, the patient was conscious, afebrile, blood pressure was 130/80mmHg. She had a performance status score at 0 and a body mass index 18 Kg/m<sup>2</sup>. The respiratory examination was normal. The cardiovascular examination did not show any particular abnormality, especially vascular murmurs. There were no palpable peripheral nodes.

Biological examinations such as complete blood count, erythrocyte sedimentation rate, C-reactive protein, fasting glycemia, creatinine, urea, serum protein electrophoresis, serum calcium, TSH, free T3 and T4 were normal. Human immunodeficiency virus serology was negative.

Upper gastrointestinal (GI) endoscopy did not reveal any abnormality except for a slightly angled esophagus 25 cm from the dental arch. Step biopsy for eosinophilic esophagitis was normal. Chest X-ray came back normal. Chest and abdominal CT scan revealed a vascular image in favor of an aberrant right subclavian artery (Figure 1 and 2) and a left incidentaloma.

## DISCUSSION

We report the first case of a dysphagia of rare cause, related to a vascular malformation. The aberrant right subclavian artery or arteria lusoria is a rare cause of dysphagia which should be considered in the presence of any dysphagia unexplained by the usual endoscopic and radiological examinations.<sup>3,4,5</sup> It is the most frequent malformation of the aortic arch and is sometimes associated with other malformations such as the presence of a bicarotid trunk or a tetralogy of Fallot.<sup>3,4</sup> Arteria lusoria can occur in young subjects but also in older patients. We reported the case of a 70-year-old female patient who presented with dysphagia lusoria. Dandelooy et al reported a similar case in a 76-year-old patient.<sup>6</sup> However, Khnaba et al reported a younger patient aged 45 years.<sup>3</sup> The occurrence of dysphagia during arteria lusoria in older patients is related to atherosclerotic degeneration of the artery that promotes esophageal compression.<sup>2</sup>

Arteria lusoria is asymptomatic in 90% of cases and discovered incidentally on radiological examinations performed in other contexts.<sup>2</sup> Clinical signs are dominated by dyspnea due to tracheal compression, dysphagia due to esophageal compression as in our patient's case. Zapata et al described dysphagia with solids during arteria lusoria as in our patient's case.<sup>4</sup>

The upper gastrointestinal (GI) endoscopy showed in our patient a slightly bent esophagus, there were no mucosal and parietal abnormalities. The upper GI endoscopy is the key examination to perform in case of dysphagia. It allows to search for organic causes of dysphagia, to eliminate tumor causes especially in older patients like our case.<sup>5</sup> During lusoria dysphagia, upper GI endoscopy does not bring significant element that can orient the diagnosis but can sometimes reveal indirect signs of extrinsic compression.<sup>6</sup>

Radiological examinations play an important role in the etiological approach to dysphagia after upper GI endoscopy. The barium transit of the esophagus is indicated to look for esophageal stenosis.<sup>7</sup> This examination was not performed in our case. Esophageal manometry may be performed depending on the clinical context and if the result of the upper GI endoscopy is normal. The injected thoracic CT scan remains the key examination for the diagnosis of dysphagia lusoria. It allows to search for extrinsic compression and to characterize the defective artery. Our patient had benefited from an injected thoracic scan showing esophageal compression of vascular origin by an aberrant right subclavian artery. According to Yang et al, the sensitivity

of the thoracic CT for the diagnosis of arteria lusoria is 100%.<sup>8</sup> Arteria lusoria was confirmed by an injected chest CT scan showing compression of the esophagus by the aberrant right subclavian artery in the absence of obvious etiologies of dysphagia. Chest CT scan could also incidentally reveal the presence of an asymptomatic arteria lusoria.<sup>8</sup>

In our case, a medical treatment was instituted associating the prescription of proton pump inhibitors and a modification of the food habits, the taking of semi-liquid meals was privileged. In the case of moderate symptoms without any impact on the patient's nutritional status, medical treatment with proton pump inhibitors combined with hygienic and dietary measures is indicated.<sup>9</sup> The association with prokinetics has not shown any additional efficacy. Surgical treatment is discussed in the presence of severe symptoms with weight loss and undernutrition. It consists of reconstruction of the aberrant artery. The benefit-risk ratio must be evaluated before this procedure. The patient should be referred to an expert vascular surgery center.<sup>2-9</sup>

## CONCLUSION

This is the first described case of arteria lusoria in Madagascar. This observation provides information on the existence of a rare cause of dysphagia of vascular origin. It should be considered before any dysphagia unexplained by the usual endoscopic and radiological examinations. It remains a diagnosis of elimination which requires a thorough investigation before retaining the diagnosis. The treatment is essentially medical except in severe forms.

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## CONFLICTS OF INTEREST

None declared.

## AUTHORS CONTRIBUTIONS

DHHL, ALRR, CIR, LHNOR: were the main contributors to the drafting of the manuscript.

NHR, THR, SHR, RMR: review and approval of final manuscript.

## ETHICAL STATEMENT

The project was approved by the hierarchical heads of University Hospital Joseph Raseta Befelatanana, Antananarivo. Written consent was obtained from the patient for publication of this case report and accompanying images.

## DATA AVAILABILITY STATEMENT

Data available on request from the corresponding author.

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Figure (arteria lusoria).pptx available at <https://authorea.com/users/399753/articles/529753-arteria-lusoria-a-rare-cause-of-chronic-dysphagia>