

Interesting images

Visualization of Killian–Jamieson bilateral diverticulum in gastroesophageal reflux scintigraphy with [^{99m}Tc]Tc-nanocolloid*Visualización de divertículo de Killian–Jamieson bilateral en gammagrafía para el estudio del reflujo gastroesofágico con [^{99m}Tc]Tc-nanocoloideM. Acuña Hernández^{a,*}, A.I. González Ramírez^b, T. Morales Avellaneda^b^a Universidad Autónoma de Bucaramanga (UNAB), Bucaramanga, Santander, Colombia^b SPECT Medicina Nuclear S.A.S., Universidad Autónoma de Bucaramanga (UNAB), Bucaramanga, Santander, Colombia

We report the case of a 73-year-old patient who consulted for pyrosis, regurgitation and dry cough predominantly at night with clinical suspicion of gastroesophageal reflux disease (GERD). The swallow study by videofluoroscopy showed bilateral Killian–Jamieson diverticula and laryngeal penetration of the contrast. These findings were modified with pharmacological treatment. However, with the persistence of symptoms, scintigraphy was

indicated to determine gastroesophageal reflux using [^{99m}Tc]Tc-nanocolloid at a dose of 1 mCi (37 MBq) mixed with 50 cc of orange juice, later complemented with 100 cc of orange juice without the radiotracer for oral and esophageal lavage. A 30-min (one image every 30 s) dynamic study in supine was immediately acquired in anterior and posterior projection, showing positive results for GERD (Fig. 1) and the presence of retention of the radiotracer in known diverticula as an incidental finding (Fig. 2).

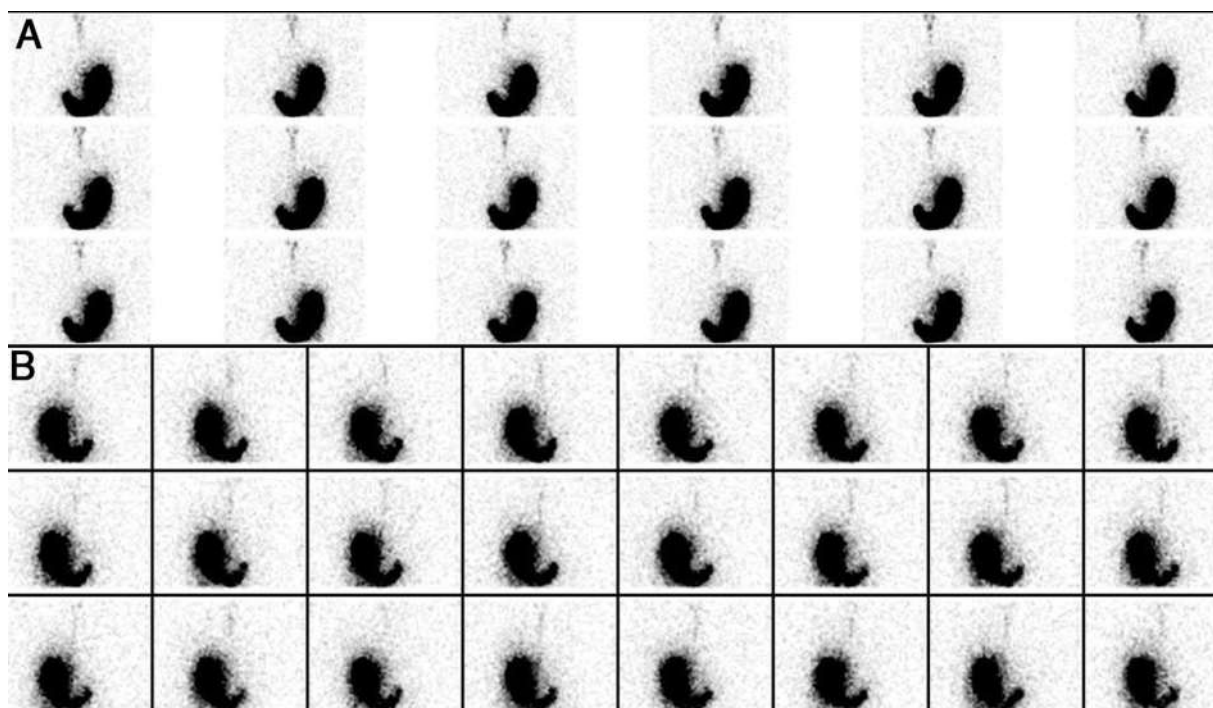


Fig. 1. [^{99m}Tc]Tc-nanocolloid scintigraphy for the study of gastroesophageal reflux. (A) Image in anterior view. (B) Image in posterior view. Abnormal ascent of the radiotracer by the esophagus up to the proximal third throughout the dynamic study, visualizing retention of the radiotracer in bilateral Killian–Jamieson diverticula already identified in the swallow videofluoroscopy in the images of anterior and posterior projection.

* Please cite this article as: Acuña Hernández M, González Ramírez AI, Morales Avellaneda T. Visualización de divertículo de Killian–Jamieson bilateral en gammagrafía para el estudio del reflujo gastroesofágico con [^{99m}Tc]Tc-nanocoloide. Rev Esp Med Nucl Imagen Mol. 2020;39:321–322.

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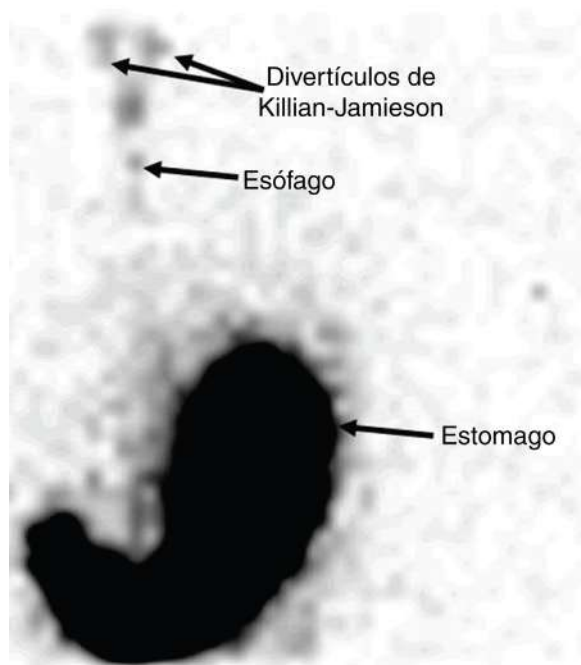


Fig. 2. Bilateral Killian-Jamieson diverticula in scintigraphy for the study of gastroesophageal reflux with [^{99m}Tc]Tc-nanocolloid.

Killian-Jamieson diverticula is also known as proximal lateral cervical esophageal diverticula or lateral diverticula in the area of the pharyngeal-esophageal junction.¹ It is an outpouching in the anterolateral wall of the proximal esophagus, just below the upper esophageal sphincter and supero-lateral to the longitudinal muscle in the area where the recurrent laryngeal nerve enters the pharynx, denominated the Killian-Jamieson triangle.^{1,2}

The incidence ranges between 0.02 and 1.87% and is bilateral in 25% of the cases.^{1,2} It is considered a pseudodiverticulum because it only has the mucosal and submucosal layers.^{2,3}

Although the physiopathology of this disease remains to be determined,⁴ it has been described that discoordination of the constrictor pharyngeal muscles generates cricopharyngeal spasms with failure of sphincter relaxation and premature contractions producing obstruction of exit flow and subsequent dilatation.^{1,2}

Most patients are asymptomatic, being an incidental finding in diagnostic tests.¹ However, symptoms of dysphagia, cough and epigastric pain have been described.^{1,2}

In diagnosis by imaging study, swallow videofluoroscopy is the method of choice, showing lateral dilatation in anterior projection with esophageal superposition in the lateral projections.³ Ultrasonography is not considered useful because of possible confounding with the presence of a thyroid nodule.^{1,2} Computed tomography (CT) of the neck with contrast can improve the diagnostic accuracy in relation to correct localization, allowing differential diagnosis with Zenker diverticulum to be ruled out.

Scintigraphy for the determination of GERD is a nuclear medicine technique that uses [^{99m}Tc]Tc-nanocolloid ([^{99m}Tc]Tc-sulfur colloid is not available in Colombia) mixed with a liquid such as milk or orange juice to assess abnormal ascent of the radiotracer through the esophagus. In pediatric populations, delayed static chest images are acquired to evaluate the presence of activity in pulmonary fields in the case of bronchoaspiration.³ The visualization of paramedial retention of the radiotracer in the esophagus is an unusual finding and should be correlated with complementary studies to clarify the localization and etiology.

Informed consent

The patient provided informed consent.

Funding

This study did not receive funding by any entity.

Conflict of interests

The authors declare no conflict of interests.

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