

Morphology of the left atrial appendage. Observations coming from one hundred cases operated on

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The left atrial appendage (LAA) is the most common source for thrombus formation inside the heart in patients with atrial fibrillation. There is a strong relationship between stroke rate and the LAA morphology. The most reliable way of assessing the LAA morphology is under direct vision during the mitral valve (MV) surgery and after resection. We share herein our experience by evaluating 100 serial cases underwent MV surgery and LAA resection.

Key words: Atrial fibrillation; Atrium; Left atrium; Left atrial appendage; Stroke.

La orejuela izquierda (OI) es la fuente más importante para la formación de trombos en el interior del corazón en pacientes con fibrilación auricular. Existe una importante relación directa entre la tasa de stroke y la morfología de la OI. La forma más confiable de evaluar la morfología de la OI es bajo visión directa durante la cirugía de la válvula mitral (MV) y después de la resección. Compartimos aquí nuestra experiencia al evaluar 100 casos en serie que se sometieron a cirugía valvular mitral y resección de la OI.

Palabras clave: Fibrilación auricular; Aurícula; Aurícula izquierda; Orejuela izquierda; Embolismo cerebral.

Cir Card Mex 2019; 4(3): 100-101

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Left atrial appendage (LAA) is the most common source for thrombus formation inside the heart in patients with atrial fibrillation (AF) [1]. The LAA is characterized by having one large body emerging from a narrow base. Briefly speaking, LAA is composed by a main lobe with or without accessory ones. The larger the number of lobes, the greater the possibility of thrombus formation inside [2]. Beigel et al. [3] have reported in a series of patients with AF the following findings: 2 lobes: 54%, 3 lobes: 23%, 1 lobe: 20%, 4 lobes: 3%.

Morphology can be strongly linked to whether or not there is an obvious bend in the LAA body. If any bend angle exists, it is called chicken wing, with or without accessory lobes. If no bend formation, there are three possibilities to take into consideration: windsock: with a main lobe and secondary lobes arising from the dominant lobe in inferior direction; cauliflower: with no main lobe while several different lobes are present; and cactus: with a central main lobe resembling the form of a fork with accessory secondary or tertiary lobes superiorly or inferiorly [4].

All this aforementioned becomes particular importance given the fact that there is substantial variation in clinical practice for stroke rate dependent upon the LAA morpho-

gy. Thereby, Di Biase et al. [5] found a relative risk for stroke of 8.0 for cauliflower, and practically zero for chicken wing.

Everything concerning LAA morphology such as the shape, lobes, and branches depend on the imaging plane. Hence, we highlight the importance of this our study herein. Anatomical identification was made under direct vision by several observers in all our cases.

We have gathered the results coming from 100 cases operated on mitral valve surgery, which are concentrated into **Table 1**.

Some examples of LAA excised during the course of a MV operation are shown in **Fig. 1**.

TABLE 1. Morphology of the left atrial appendage

Morphology of the left atrial appendage (%)	100
Cactus	38
Chicken wing	28
Windsock	18
Cauliflower	16

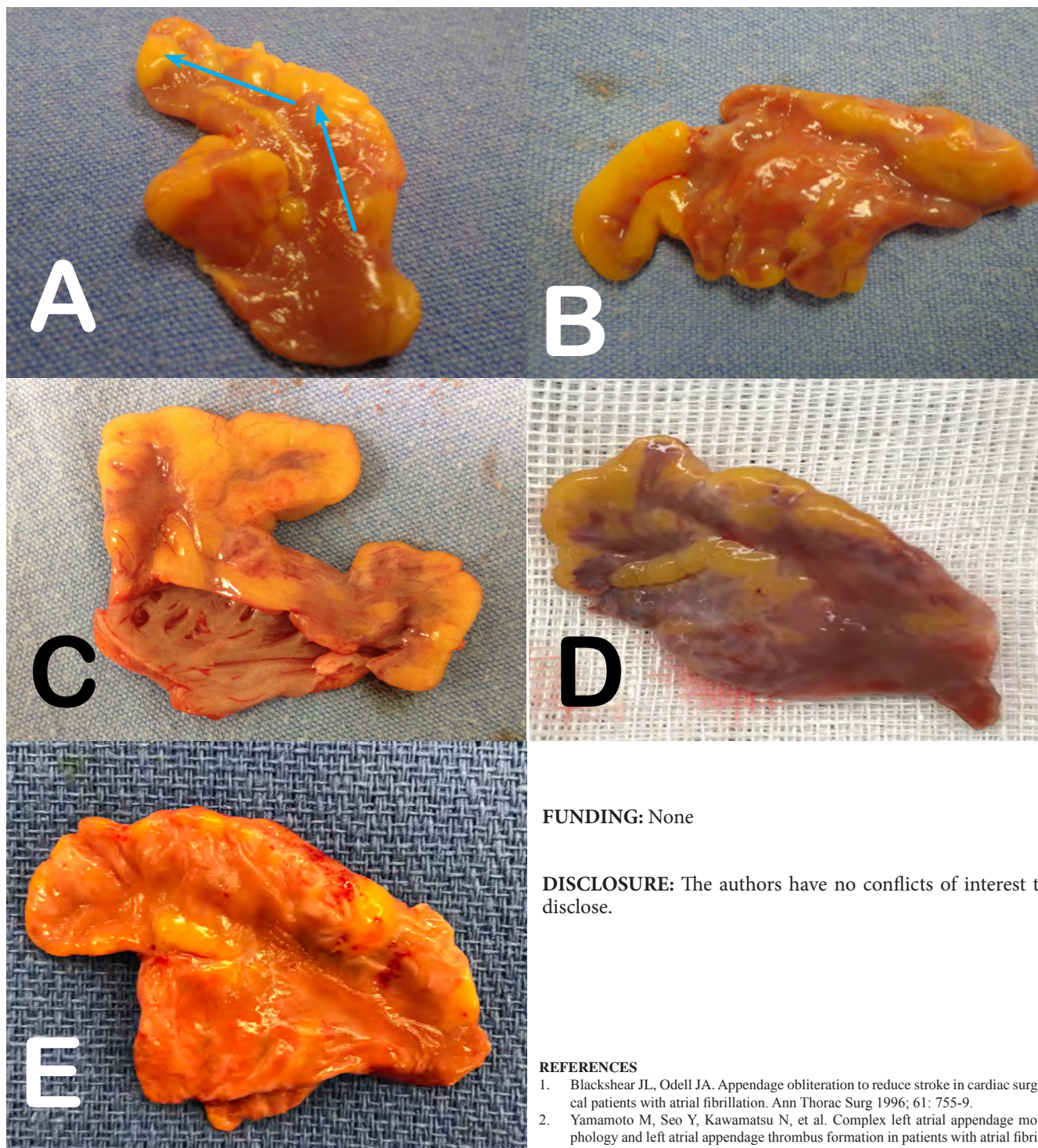


Figure 1. Diverse morphologies for the left atrial appendage. (A) Chicken wing with the bend angle in blue arrows. It can also be observed an accessory lobe on the left side at the basal orifice. The following three types are lacking of any bend formation: (B) Windsock, with a main central lobe with several secondary smaller lobes inferiorly; (C) Cauliflower, with no main lobe but several secondary lobes; (D) Cactus, with a central main lobe formation with several secondary fork-like lobes; (E) Windsock, with no accessory lobes but with a main central lobe with no bend angle.

FUNDING: None

DISCLOSURE: The authors have no conflicts of interest to disclose.

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