



# An Unveiled Culprit of Acute Embolic Stroke: Cardiac Myxoma

Sarah Chang, Neha Prakash, Jagroop Doad, Khoa Ngoc Dang Tran, Ngoc Thai Kieu, Van Tuong Nguyen, Phillip Tran DO, FACC

## INTRODUCTION

Cardiac myxomas (CM) are rare, benign primary tumors that can lead to significant morbidity and mortality if untreated. Prompt, definitive treatment of CM is well documented, but there is limited literature to dictate management timing in acute ischemic stroke.

## BACKGROUND

- CM Incidence: 1/1 million, Prevalence: <5/10,000
- Clinical presentation: cardiac, constitutional, embolic, or neurological symptoms
- Majority originate in left atrium from interatrial septum
- Embolic-associated characteristics: width <3cm, high mobility, irregular surface
- Early surgery recommended in patients without acute intracerebral infarcts
- Patients with recurrent stroke after initial stroke & discovery of CM had prolonged time interval before surgery

## CASE PRESENTATION

61-year-old female presented 8 hrs after episode of left facial weakness, aphasia, & slurred speech. Symptoms resolved over 8hrs.

- Non-contrast head CT & CTA negative
- Brain MRI w/o contrast at 24hrs shows ischemic lesions (Fig. 1)
- Transthoracic & transesophageal echocardiogram reveal mobile cardiac tumor (Fig. 2)
- Cardiothoracic surgery performed surgical resection 4 days afterwards. Pathology consistent with myxoma.

Figure 1. MRI brain w/o contrast demonstrating small multifocal ischemic lesions in the lacunae, right cerebellum, right frontal lobe

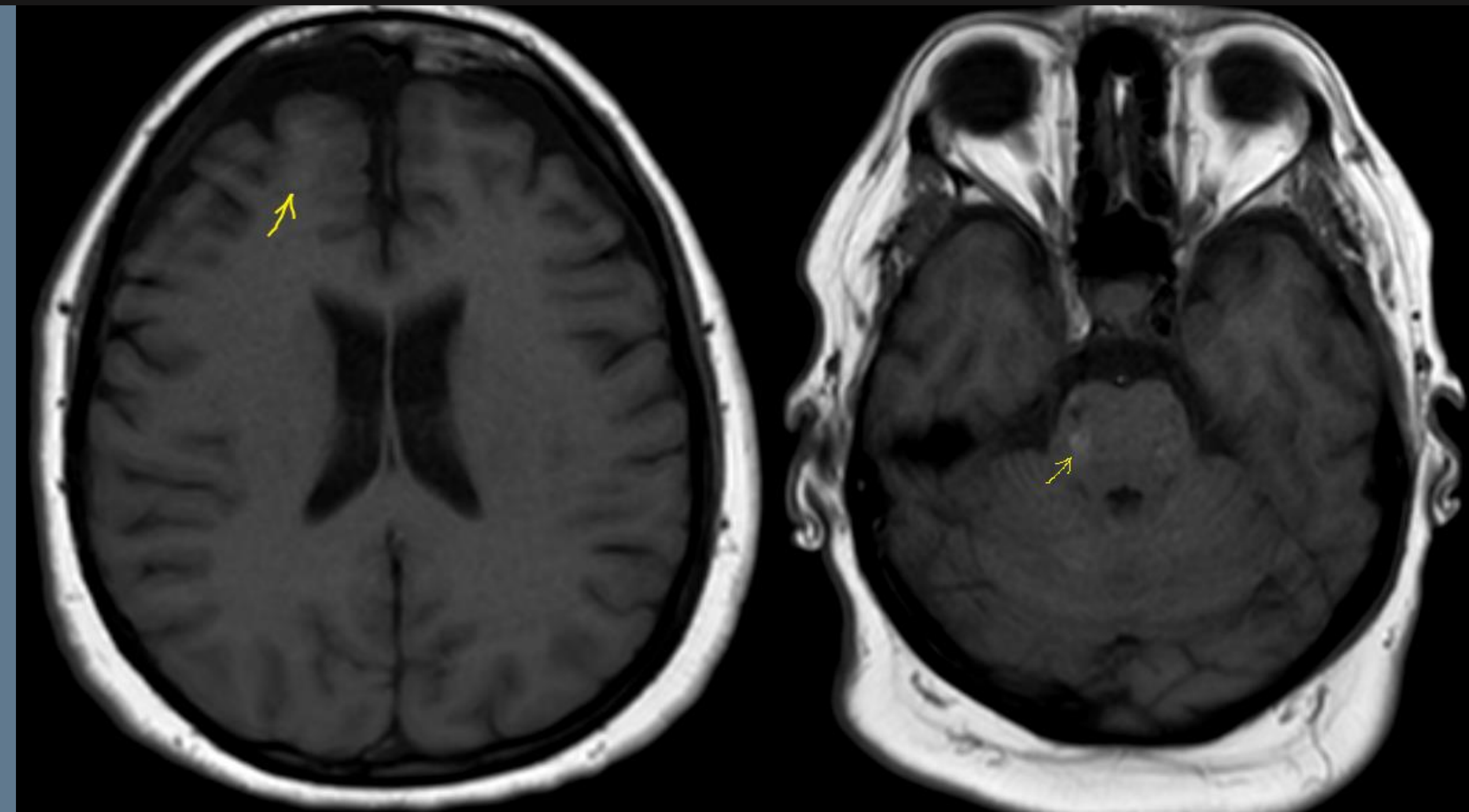


Figure 2A. TTE shows a mobile large mass on the posterior mitral valve leaflet with protrusion through the valve into the left ventricle.

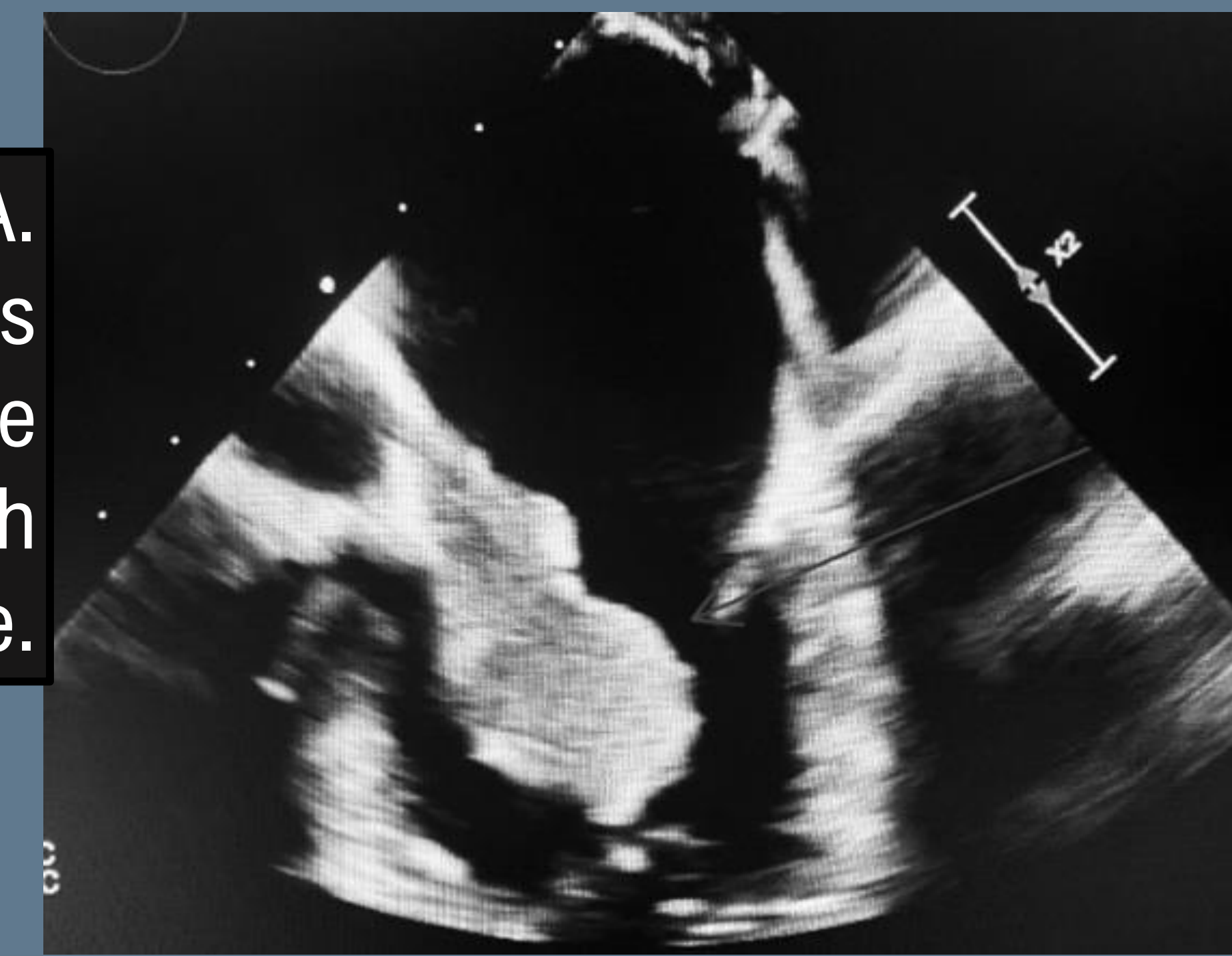


Figure 2B. TEE shows 0.8cm mass originating from the interatrial septum just above the mitral annulus

## DISCUSSION

- Presentation of an embolic stroke with no obvious etiology
- No history or symptoms of atrial fibrillation
- No significant risk factors for cardiovascular disease outside of elevated BMI
- TTE was not able to visualize tumor origin location
- TEE able to better identify tumor character and location
- Mobility into mitral valve and left ventricle may contribute to risk of embolic stroke
- Risk of hemorrhagic transformation (HT) considered for delaying cardiac surgery
- Ischemic lesions <1.5cm have smaller association with HT
- Surgical excision not delayed due to high-risk character of myxoma & lower risk of HT in smaller lacunar infarcts.

## CONCLUSIONS

- TTE should be followed with TEE for detailed tumor characteristics
- Origin location, size, & mobility of tumor may indicate risk for recurrent embolic stroke
- Consider risk of recurrent embolism vs HT
- If high risk for recurrent embolism and lower risk of HT, consider resection within days

## REFERENCES

- Kalecik, M., Bayam, E., Güner, A., Kıp, A., Kalkan, S., Yesin, M., ... & Özkan, M. (2019). Evaluation of the potential predictors of embolism in patients with left atrial myxoma. *Echocardiography*, 36(5), 837-843.
- Liu, Y., Wang, J., Guo, L., & Ping, L. (2020). Risk factors of embolism for the cardiac myxoma patients: a systematic review and meta-analysis. *BMC cardiovascular disorders*, 20(1), 348. <https://doi.org/10.1186/s12872-020-01631-w>
- PINEDE, LAURENT; DUHAUT, PIERRE; LOIRE, ROBERT. Clinical Presentation of Left Atrial Cardiac Myxoma: A Series Of 112 Consecutive Cases. *Medicine*: May 2001 - Volume 80 - Issue 3 - p 159-172
- Macgowan, S. W., Sidhu, P., Aherne, T., Luke, D., Wood, A. E., Neligan, M. C., & mcGovern, E. (1993). Atrial myxoma: national incidence, diagnosis and surgical management. *Irish journal of medical science*, 162(6), 223-226. <https://doi.org/10.1007/BF02945200>
- Samanidis G, Khoury M, Balanika M, Perrea DN. Current challenges in the diagnosis and treatment of cardiac myxoma. *Kardiol Pol*. 2020;78(4):269-277. Doi:10.33963/KP.15254
- Qiao ML, Ma L, Wang CB, et al. Clinical features, risk factors and survival in cardiac myxoma-related ischemic stroke: A multicenter case-control study. *J Neurol Sci*. 2023;444:120517. Doi:10.1016/j.jns.2022.120517
- Stefanou MI, Rath D, Stadler V, et al. Cardiac Myxoma and Cerebrovascular Events: A Retrospective Cohort Study. *Front Neurol*. 2018;9:823. Published 2018 Oct 3. Doi:10.3389/fneur.2018.00823
- Mehdi Z, Birns J, Partridge J, Bhalla A, Dhesi J. Perioperative management of adult patients with a history of stroke or transient ischaemic attack undergoing elective non-cardiac surgery. *Clin Med (Lond)*. 2016;16(6):535-540. Doi:10.7861/clinmedicine.16-6-535
- Thomas, S. E., Plumber, N., Venkatapathappa, P., & Gorantla, V. (2020). A Review of Risk Factors and Predictors for Hemorrhagic Transformation in Patients with Acute Ischemic Stroke. *International Journal of Vascular Medicine*, 2021.