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BLOOD CYST- A RARE CAUSE OF CARDIO-EMBOLIC STROKE

Neurology

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ABSTRACT

We report a case of 58 year old female who presented with sudden onset weakness of all four limbs and altered sensorium. MRI brain revealed multiple areas of DWI restriction in both cerebral hemispheres. 2D Echo revealed a large, mobile, shaggy, rounded vegetation on both AML and PML with high embolic potential, no ring abscess, moderate MR. TEE revealed large cystic mass, multi-loculated cyst extending up to LA appendage. We report a very rare case of blood cyst presenting as cardio-embolic stroke and review the likelihood of its embolization and its appropriate management in stroke patients.

KEYWORDS

Blood cyst, Cardio-embolic stroke, Embolization.

INTRODUCTION:

Blood cysts are thin walled cysts, lined by flattened, cobblestone-shaped epithelium and filled with non-organized blood. Blood cysts of heart are commonly reported from autopsy series of infants less than 6 months. They are found in approximately 50 % of infants less than 2 months of age and are very rare after 2 years. Commonly seen over heart valves but can be seen over other areas also. They are often asymptomatic but a few cases resulting in embolization have also been reported.

CASE REPORT:

A 58 year old female with no past medical comorbidity had presented to the emergency with abrupt onset quadriparesis (1/5) with motor aphasia (>4.5 hrs). Patient was hemodynamically stable at the presentation with NIHSS 14/42. No history of excessive bleeding was reported and there was no reported family history of coagulation disorder. MRI Brain revealed bilateral hemispheric acute ischemic infarcts affecting multiple arterial territories (Figure 1).

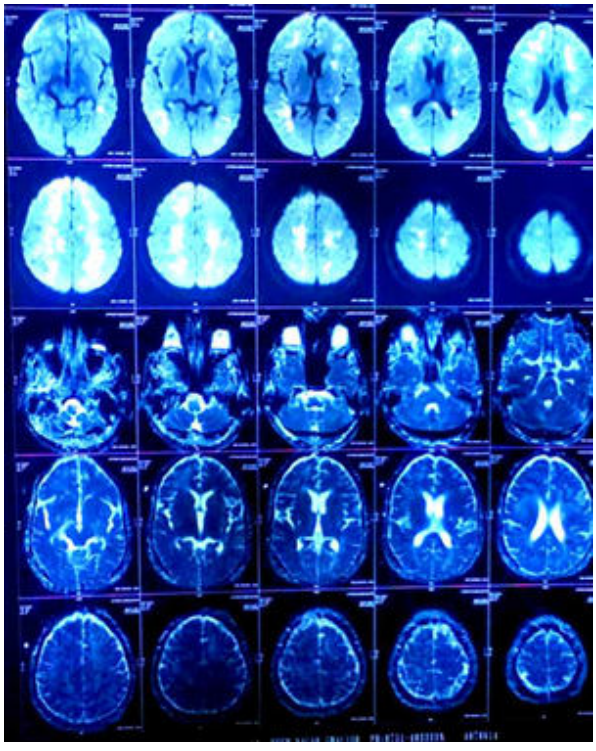

FIGURE 1.

MRI cervical spine did not reveal any significant cord compression. Repeat NCCT head revealed evolutionary changes in acute infarct in bilateral MCA-ACA territory involving the parasylvian and left frontal cortex with loss of grey-white matter differentiation. DSA study revealed left MCA territory infarct without any significant luminal narrowing of circle of Willis, CCA, ICA, ECA with mild atherosclerotic changes with possible recanalization of short segment thrombosis in M2 branch of left MCA. 2D Echo revealed LVEF 58% with a large, mobile, shaggy, rounded vegetation on both AML and PML with high embolic potential, no ring abscess, moderate MR (Figure 2, 3).

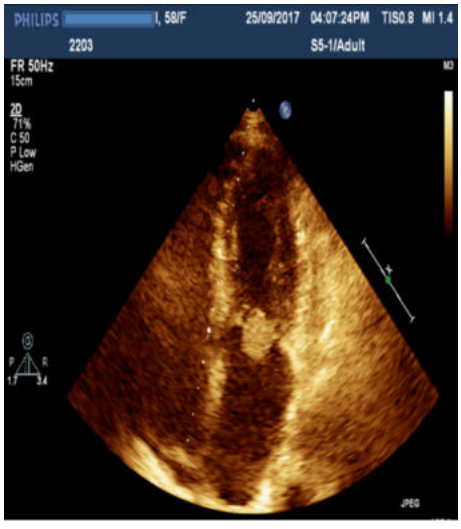

FIGURE 2.

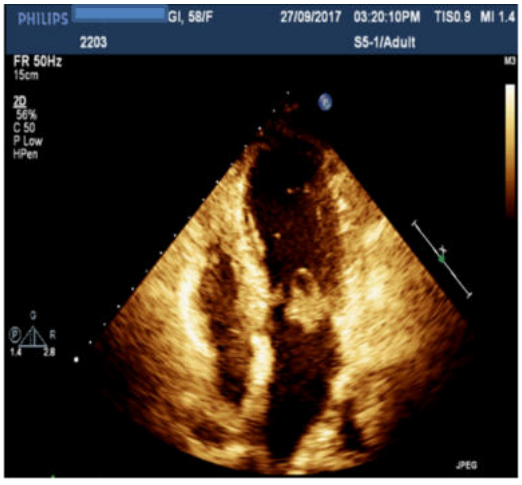

FIGURE 3.

TEE revealed large cystic mass, multi-loculated cyst extending upto LA appendage. Haematological workup was within normal limits. Prothrombotic factors, homocysteine, ANA, VDRL etc. were negative. Patient showed improvement in her neurological status to a conscious state with fair comprehension to speech with improvement in her motor power of right upper limb and right lower limb 3-/5 with mRS 3. She was managed with antiplatelets, LMWH in therapeutic doses, statins, limb-speech therapy and other supportive care. Patient was suggested for surgery in view of possibility of embolic stroke in future, but patient refused for the surgical intervention. Patient was discharged on warfarin. She remains well with no recurrence of stroke or clinical bleeding during the follow up in past 3 months with mRS 2.

DISCUSSION:

- Intracardiac blood cysts were first reported by Elsasser in 1844 and are mostly congenital. The cysts regress spontaneously in most infants and are rare in adults.
- They are usually detected on pulmonary, tricuspid, and mitral valves and rarely in the ventricles and atrium [1].
- They are mostly benign but occasionally can cause valve stenosis, regurgitation, and left ventricular outflow obstruction [2]. Embolic stroke from a mitral blood cyst has also been reported in a few cases in the literature.
- The cysts are thin-walled, lined by flattened, cobblestone-shaped epithelium, and filled with non- organized blood and rupture and thrombosis of the cysts with embolization is thus a potential complication [3].
- Various theories have been proposed to explain the development of blood cysts e.g., enlargement of vascular spaces, heteroplastic changes of the tissue becoming primitive pericardial mesothelium, inflammation, anoxia, and hemorrhagic diathesis—but the exact mechanism of development remains unknown [4,5,6].
- Rare cardiac causes of embolic stroke reported in literature include cardiac papillary fibroelastoma, cardiac myxoma, and thrombosis secondary to atrial septal aneurysm, cardiac hydatidosis and pulmonary arteriovenous fistula [7, 8].
- The natural history of the cyst is unknown because long-term follow-up data are lacking.
- There is no consensus regarding the management of blood cysts .Pelikan et al suggested that asymptomatic cysts, because of their benign character, can be monitored with echocardiography, and resection should be reserved for cysts that interfere with normal cardiac function [9].
- Surgery should be the first choice of treatment in symptomatic patients who have valvular regurgitation, stenosis, outflow obstruction, and stroke. Surgery also confirms the diagnosis (intra-operative) and via pathological examination and rules out malignancy [10].
- However, follow-up of patients by serial echocardiographic imaging can be the management modality for asymptomatic patients and patients who are against surgery.

ABBREVIATION: AML- Anterior Mitral Leaflet; DWI- Diffusion Weighted Imaging; ; MR- Mitral Regurgitation ; LA- Left atrial Appendage; TEE- Trans Esophageal Echocardiography; PML- Posterior Mitral Leaflet.

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