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POSTER PRESENTATION

Complex Aortic Arch Plaque as an Overlooked Cause of Large-Vessel Ischemic Stroke: Two Cases

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BACKGROUND

Aortic atherosclerotic plaques are a systemic and often overlooked source of thromboembolism. Plaques that are **mobile or >4 mm thick** carry a markedly increased risk of stroke, TIA and peripheral embolization, yet a floating aortic arch thrombus is rarely considered as an initial explanation for large-vessel ischemic stroke.

We describe two patients with large ischemic stroke caused by a high-grade, floating aortic arch thrombus overlying complex plaque, illustrating the work-up and treatment considerations, including off-label IV thrombolysis.

DESIGN AND METHODS

Retrospective two-patient case report.

Case 1 – 66-year-old woman

Diabetes, hypertension, **active COVID-19**. Acute aphasia and right hemiplegia (**NIHSS 14**). CTA: **left ICA occlusion** and a **2.2-cm floating thrombus** on the proximal aortic arch. **IV alteplase** given within the window; continuous infusion withheld given uncertainty about aortic dissection; thrombectomy deferred (chronic intracranial occlusion).

Case 2 – 39-year-old man

Hypertension; presented after a minor road-traffic accident with severe deficits (**NIHSS 23**). CTA: **left ICA occlusion** and a large **5 × 1-cm floating aortic arch thrombus**. Not a candidate for thrombolysis or thrombectomy; managed conservatively in intensive care.

RESULTS

Case 1

Repeat CT aortography at 10 days: **complete resolution of the floating thrombus** after alteplase and subsequent LMWH. Hypercoagulable work-up negative apart from COVID-19. Discharged with moderate-to-severe disability (**mRS 4/6**).

Case 2

Mildly positive lupus anticoagulant. **Malignant MCA infarction** with midline shift; decompressive craniectomy; **died on hospital day 9** after brainstem herniation.

Neither case showed aortic dissection or aneurysm on angiography.

TABLE 1. COMPARISON OF THE TWO CASES

Feature	Case 1 (66-year-old woman)	Case 2 (39-year-old man)
Risk factors	Diabetes, hypertension, active COVID-19	Hypertension, mildly positive lupus anticoagulant
Presentation (NIHSS)	14 — global aphasia, right hemiplegia	23 — drowsy, global aphasia, right hemiplegia
Aortic arch thrombus	2.2-cm floating thrombus, anterior wall	5 × 1-cm floating thrombus, anterolateral wall
Treatment	IV alteplase bolus + LMWH	Not a candidate for thrombolysis/thrombectomy; neurocritical care
Outcome	Complete thrombus resolution at 10 days; modified Rankin Scale 4/6 at discharge	Malignant MCA infarction, decompressive craniectomy, died day 9

CONCLUSIONS

Look at the aortic arch

Complex, mobile arch plaque with superimposed floating thrombus is an important, likely **underrecognized cause of large-vessel ischemic stroke** and should prompt evaluation for a proximal aortic source when standard cardioembolic and large-vessel work-ups are unrevealing.

Treatment is individualized

After excluding aortic dissection and aneurysm, **IV alteplase** can achieve thrombus resolution in selected patients, though functional outcomes remain guarded and thrombectomy candidacy must be individualized. Larger, controlled studies are needed.

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