'Halo Score': missing large-vessel giant cell arteritis— do we need a 'modified Halo Score'?

We read with great interest the article on 'Novel ultrasonographic Halo Score for giant cell arteritis (GCA): assessment of diagnostic accuracy and association with ocular ischaemia' by van der Geest et al.[1] First, we would like to congratulate them for proposing the novel ultrasonographic score useful for both diagnosis and prognostication of the GCA. In the future, it may also serve as a disease activity marker in GCA. Large-vessel giant cell arteritis (LV-GCA) is a relatively less addressed entity. The prevalence of LV-GCA is not well defined and ranges from 10% to 83%, depending on the diagnostic modality.[2 3]

LV-GCA differs in terms of clinical presentation, vessel involvement and complications.[3] In a study by Muratore et al, diagnostic performance of American College of Rheumatology criteria for GCA[4] was as low as 39% for LV-GCA compared with 95% in cranial GCA.[5] Positron emission tomography (PET) scan has shown better performance in diagnosing LV-GCA but limited by its widespread non-availability, cost and radiation exposure.[3] On the other hand, early diagnosis of LV-GCA is of paramount importance due to its high likelihood of development of thoracic aneurysm and mortality.[6 7] Recently, Diagnostic and Classification Criteria for Primary Systemic Vasculitis has proposed a draft criterion for GCA[8] incorporating ultrasonography (USG) and a proposal for including PET scan. On the other hand, assessment of disease activity in large-vessel vasculitis (LVV) is a challenge. Recently, European League Against Rheumatism has proposed a consensus definition for active disease and relapse in LVV.[9] Definition of the active disease is largely contributed by multiple clinical features indicating vascular insufficiency. This may be confounded by secondary atherosclerosis, especially in the elderly population with GCA involving large vessels similar to Takayasu arteritis, having accelerated atherosclerosis.[10] Imaging is an integral part of diagnosis and activity assessment in LVV.[2 9] There is always an ongoing debate regarding the best imaging modality among CT, MRI, PET scan and USG. USG has its advantage of easy availability, cheapness and being radiation-free but limited to some extent by its operational dependency. USG has gained its popularity in GCA for halo sign[11 12] and recommended as a first-line investigation.[13]

Here we suggest a modified Halo Score, which may be conceptually more helpful in diagnosis and may prognosticate the disease based on previous available data.

Assessment of three vascular territories, instead of two, that is, bilateral temporal, subclavian (new addition) and axillary arteries (figure 1). The final score will be based on the sum of the two higher scores.

This may be helpful in diagnosis as

1. Of patients with LV-GCA, 72%–93% have subclavian involvement compared with 54%–66% who have axillary artery involvement.[5]
2. USG of the subclavian artery has been shown to be a useful tool for the diagnosis of early Takayasu arteritis.[14]
3. It may be incorporated in the development of the new criteria due to its widespread availability, cost-effectiveness and no radiation hazard.

This may be helpful in prognostication as the current Halo Score may underestimate the burden of the inflammation as it does not incorporate the subclavian arteries.

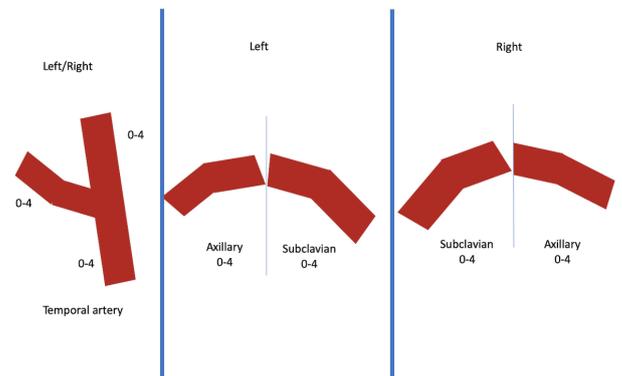**Arghya Chattopadhyay** 🔵 ,[1] **Alakendu Ghosh**[2]

Figure 1 Proposed vascular territories for the assessment of modified Halo Score. Suggestions for inclusion of three vascular territories, instead of two, that is, bilateral temporal, subclavian (new addition) and axillary arteries. The final score will be based on the sum of the two higher scores.

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REFERENCES

1 van der Geest KSM, Borg F, Kayani A, et al. Novel ultrasonographic halo score for giant cell arteritis: assessment of diagnostic accuracy and association with ocular ischaemia. *Ann Rheum Dis* 2020;79:393–9.
2 Salvarani C, Cantini F, Hunder GG. Polymyalgia rheumatica and giant-cell arteritis. *Lancet* 2008;372:234–45.
3 Koster MJ, Matteson EL, Warrington KJ. Large-Vessel giant cell arteritis: diagnosis, monitoring and management. *Rheumatology* 2018;57:ii32–42.
4 Hunder GG, Bloch DA, Michel BA, et al. The American College of rheumatology 1990 criteria for the classification of giant cell arteritis. *Arthritis Rheum* 1990;33:1122–8.
5 Muratore F, Kermani TA, Crowson CS, et al. Large-Vessel giant cell arteritis: a cohort study. *Rheumatology* 2015;54:463–70.

6 Evans JM, O'Fallon WM, Hunder GG. Increased incidence of aortic aneurysm and dissection in giant cell (temporal) arteritis. A population-based study. *Ann Intern Med* 1995;122:502–7.

7 Nuenninghoff DM, Hunder GG, Christianson TJH, *et al*. Mortality of large-artery complication (aortic aneurysm, aortic dissection, and/or large-artery stenosis) in patients with giant cell arteritis: a population-based study over 50 years. *Arthritis Rheum* 2003;48:3532–7.

8 Ponte C, Grayson P, Suppiah R, *et al*. 077. classification criteria for large-vessel vasculitis. *Rheumatology* 2019;58:kez058.017.

9 Hellmich B, Agueda A, Monti S, *et al*. Update of the EULAR recommendations for the management of large vessel vasculitis. *Annals of the Rheumatic Diseases* 2018;2020:19–30.

10 Cohen Tervaert JW. Cardiovascular disease due to accelerated atherosclerosis in systemic vasculitides. *Best Pract Res Clin Rheumatol* 2013;27:33–44.

11 Dejaco C, Ramiro S, Duftner C, *et al*. EULAR recommendations for the use of imaging in large vessel vasculitis in clinical practice. *Ann Rheum Dis* 2018;77:636–43.

12 Schmidt WA, Kraft HE, Völker L, *et al*. Colour Doppler sonography to diagnose temporal arteritis. *Lancet* 1995;345:866.

13 Schmidt WA, Kraft HE, Vorpahl K, *et al*. Color duplex ultrasonography in the diagnosis of temporal arteritis. *N Engl J Med* 1997;337:1336–42.

14 Schmidt WA, Nerenheim A, Seipelt E, *et al*. Diagnosis of early Takayasu arteritis with sonography. *Rheumatology* 2002;41:496–502.