

Comment on: An unusual cause of a halo sign

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3 Dear Editor,
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6 Setting up a validated ultrasonography service for the diagnosis of giant cell arteritis (GCA) is a
7 worthwhile but laborious task (1). Ho et al should be complimented on setting up such a service and
8 sharing this interesting vignette with us (2). They have shared a case where an individual with typical
9 clinical and laboratory features of GCA was also found to have sonological evidence of GCA but
10 eventually was diagnosed as having an infection. They have cited a previous paper in *Rheumatology*
11 where false positive halo signs have been reported (3).
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16 On ultrasonography, the halo sign and the compression sign are highly specific features of GCA (4).
17 The OMERACT validated definition of the halo sign is “Homogenous, hypoechoic wall thickening, well
18 delineated towards the luminal side, visible both in longitudinal and transverse planes, most
19 commonly concentric in transverse scans” (4). The figures do not meet this definition. They only show
20 the compression sign, but no halo sign. It is not possible to see the intima-media complex (IMC) clearly
21 on either the near or posterior walls in both images and we do not have the longitudinal images. Figure
22 1C demonstrates an anechoic area rather than hypoechoic suggesting an artefactual nature of the
23 image. In addition, figures 1A and 1C have a hyperechoic area under the lumen suggestive of
24 atherosclerotic change which is responsible for a thickening of the IMC (5).
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30 Ultrasonography has been the most translatable advancement for the diagnosis of a systemic
31 vasculitis since the introduction of testing for antineutrophil cytoplasmic antibody. But it has had its
32 detractors. A recent clinical trial did not accept ultrasonography as evidence of diagnosis of GCA (6).
33 The American College of Rheumatology specifically argued for the use of a temporal artery biopsy
34 versus ultrasonography (7). In the paper cited by the authors 14/305 cases were thought to have a
35 false positive halo sign (3). 4/14 had a final diagnosis of Polymyalgia Rheumatica and 3/14 were
36 diagnosed as having atherosclerosis. A diagnosis of Polymyalgia Rheumatica is not sustainable in the
37 presence of arterial halo; and atherosclerosis has a distinctly different definition (4). We must be
38 careful in reporting images which are not truly representative of the disease process because they will
39 be invariably used as evidence against the widespread uptake of this technology.
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51 We would also urge medical journals to request the settings used and the equipment used, because
52 they are critical to the interpretation of the image (8). In our experience of having scanned thousands
53 of cases between us, we have seldom found false positive halos in individuals suffering with other
54 forms of systemic vasculitides, cancers and infections. The false positive halo should be differentiated
55 from a pseudo halo by testing its presence despite increasing colour gain and reducing the pulse
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3 repetition frequency. Without the knowledge of these values, the image could be readily
4 misinterpreted. A typical example of a halo and compression sign is as in Figure 1.
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15 Conflicts

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18 The authors have declared no conflicts of interest.
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Figure 1 Halo sign (Left) and Compression Sign (Right) in the parietal ramus of the superficial temporal artery. Images acquired with GE Logiq e Ultrasonography machine using Linear 10-22 MHz probe.