Watson’s water hammer pulse

Sir,
We read with great interest the excellent comprehensive review titled “Watson’s water hammer pulse” published in your journal.[1] We would like to draw attention to some additional clinically relevant information regarding this physical sign.

Babu et al., have noted that the sensitivity of water hammer pulse in the diagnosis of aortic regurgitation (AR) varies from 38-95% depending upon the severity of AR.[2] The overall specificity is only 16% for all degrees of AR. They also report that the clinical sign carries a negative predictive value of 73% for any degree of AR and 95% for severe AR.[3] This indicates that the absence of water hammer pulse makes the diagnosis of AR less likely. The low specificity found in this study indicates that this sign may be seen in conditions other than AR and that it is probably most useful when seen in conjunction with other findings of AR on physical examination.

The water hammer pulse is believed to result from a wide pulse pressure. However, Warnes et al., using intra-arterial radial artery measurements in five patients with severe AR demonstrated that the widened pulse pressure narrows with arm elevation. This fall in pulse pressure was associated with an increased palpated pulse. They attributed these changes to increased arterial compliance.[4] The pulse pressure is not wide to begin with in patients with acute AR. Therefore, a further fall in pulse pressure with limb elevation may not be as easily clinically appreciable as in patients with chronic AR. This can mask the water hammer pulse in patients with acute AR.

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References