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Letter to the Editor General Surgery

Left hand index finger predominance of Quincke pulse

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Quincke pulse is an eponymous sign first described by Heinrich Irenaeus Quincke (1842–1922), in his paper titled "Beobachtungen über Capillar- und Venenpuls" (Observations on the capillary and venous pulse), published in 1868 [1]. As reported by Quincke:

One notices on his/her own fingernails or on another person, the capillary pulse located at the border between the more whitish, blood-poor area and a redder more intensely injected portion of the capillary system of the nail-bed. In the majority of the persons examined, one will observe a forward and backward movement of the border of the red and white parts synchronized with the heartbeat. He/she should convince themselves that the increase in redness occurs a moment later than the apex beat, but still distinctly systolic and rather rapid, while the retreat of the border of the redness occurs more slowly. The behavior of the wave is perceptible to the eye [1, p. 357].

We have identified four images, three men and one woman, published on Quincke pulse found in patients with aortic insufficiency since 2013, all involving the left hand [2, 3]. Two images were published as a clinical image in *NEJM* (2013 and 2018, references upon request). Three of the four images were of the index finger (one also the thumb), while the other image was not specified (personal communication). Quincke recognized, "*In general, it is impossible to specify which of the fingernails this finding is more clearly seen, but most often it is the index finger. [...] [However,] not every fingernail shows the mentioned white zone, general blood-supply, strong and frequent action of the heart, and high arterial pressure* [1, p. 357]." He found that it was absent in the toenails, a finding which he attributed to the longer arterial course and higher hardness and thickness of the nail [1].

The different locations identified may be influenced by local and regional factors that lead to alteration in capillary blood flow, blood volume, vasomotor reflexes, and elasticity of the arterial vessels, all of which results in secondary variations in nail thickness [4]. Using a 20 MHz ultrasound, Wollina et al., in their study with 34 healthy subjects and 37 patients with nail disease found that the mean nail thickness varied between 0.397 mm (left fifth finger) and 0.481 mm (right thumb) in otherwise healthy persons [5]. Interestingly, the nail and matrix volume were higher on the right hand compared to the left hand and higher in men compared to women [5]. However, the hand predominance of the subjects is unknown from this study. The finding of regional variation in nail thickness and thus nail transparency provides further evidence to support the theory why this

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sign is limited to the left hand and why some but not all fingers display this finding. Future reports should specify which fingers and hand Quincke sign are seen, had dominance and whether additional maneuvers, such as transilluminating the nail bed, applying uniform pressure, or elevating the hand is required to unmask this sign [2, 3]. Correlation with the ultrasonographic thickness of the nail and matrix provides additional support to confirm this theory.

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