

Prevalence of palpable wrist pulses

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A survey of healthy children revealed little variability in the distribution of wrist pulses. Radial pulses were always present; ulnar pulses were missing in only 3.4 per cent and were never unilaterally absent.

Occasionally, one sees a patient with a missing radial or ulnar pulse. This finding is often dismissed as a variant of normal if no evidence of cardiovascular disease is present, or ascribed to peripheral arterial occlusion if other pulses are absent. In order to clarify the significance of these variations, wrist pulses were examined in a group of healthy children and young adults.

Method

Two hundred and ninety residents of a children's summer camp (150 girls and 140 boys) were carefully examined for the presence of radial and ulnar pulses. Mean age was 13 years (6-21 years). The accuracy of pulse palpation was checked with the reactive hyperaemia test (Allen, 1929). After compression of the wrist vessels and blanching of the hand, the anatomical area for each vessel was released individually, and the rapidity of circulatory return through the radial and ulnar arteries was compared.

Results

Radial pulses were palpable bilaterally in every subject examined. The ulnar pulse was missing bilaterally in 10 of the 290 children (3.4%) but was never unilaterally absent. A missing ulnar pulse was always associated with a conspicuous delay in hyperaemia after compression and release of the ulnar side of the wrist. In all other cases, reactive hyperaemia was prompt.

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Discussion

The significance of absent peripheral pulses can be assessed only when the range of normal variation is known. Past studies have indicated that an absent posterior tibial pulse is almost always pathological, but that the dorsalis pedis pulse may be absent in 5-12% of normal individuals (Stephens, 1962; Barnhorst and Barner, 1968).

The present findings in a group of active healthy children and young adults indicate less variability for the wrist arteries. Neither the radial nor ulnar pulse should be absent unilaterally though ulnar pulses may be occasionally missing bilaterally.

In view of these findings, it is advisable to palpate carefully for the presence of 2 distinct wrist pulses during routine physical examinations. A missing radial or ulnar pulse may be an early clue to the presence of arterial occlusive disease.

References

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