Hypothenar Hammer Syndrome

Ravindra Sharma, MD; William Ladd, MD; Gary Chaisson; Richard Abben, MD

A 50-year-old air-conditioning repairman presented to our emergency room with a 12-hour history of progressively worsening pain, decreased temperature, and bluish discoloration involving the third right finger. The patient denied a history of prior cardiovascular problems but did smoke tobacco heavily. Careful questioning revealed that he often utilized his hand as a “hammer” and had been particularly vigorous with this technique a few days prior to admission. Physical examination demonstrated ischemic changes in the tip of the middle finger of his right hand. An x-ray (Figure 1) of the right hand demonstrated an old un-united fracture of the ulnar styloid. He was treated with intravenous heparin and underwent angiography of the right upper extremity via the right femoral approach. The study demonstrated subtotal occlusion of the right ulnar artery at the wrist with poor filling of the digital arteries supplying the lateral 3 fingers (arrows, Figure 2). The results were compatible with hypothenar hammer syndrome, a term first coined by Conn et al in 1970 although Guttani and Von Rosen had previously described similar cases. The syndrome is seen in the dominant hand of males who, during occupational or recreational activities, use their hand as a hammer. The mechanism of the injury relates to repetitive trauma to the superficial division of the ulnar artery in the hypothenar region of the hand. He was treated with several boluses of nitroglycerin, verapamil, and papaverine administered into the brachial artery. Repeat angiography demonstrated improved filling. His symptoms improved over the next 24 hours and did not recur. He was discharged on a regimen of subcutaneous dalteparin for 5 days and oral aspirin, clopidogrel, and nifedipine. He was also advised to quit smoking and refrain from using his hand in the manner described.

References
Figure 1. Radiograph of right hand showing old un-united fracture of ulnar styloid.

Figure 2. Photograph showing subtotal occlusion of right ulnar artery with poor filling of digital arteries supplying third, fourth, and fifth fingers.
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