

Clinical Images

Bedside Hand Grip Assessment with the Sphygmomanometer

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KEY WORDS: physical examination; hand strength; muscle strength dynamometer.

J Gen Intern Med 28(10):1381

DOI: 10.1007/s11606-013-2426-0

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A 39-year-old, right-handed man presented with rapidly progressive weakness of his dominant hand. On examination, his grip strength was normal in the left hand and decreased in the right (Fig. 1). He was found to have a left-sided brain tumor, which was thought to explain his weakness.

Routine bedside assessment of grip may not detect subtle changes in strength. Using the sphygmomanometer, clinicians can measure grip strength at the bedside more objectively¹ (Fig. 2). First, the sphygmomanometer is rolled into a cylinder comfortable for the patient to grip at rest. The cuff is then inflated to 20 mmHg, and the patient applies maximal grip force to the cuff. The gauge needle indicates the patient's applied pressure (left hand, about 250 mmHg). In this case, his right hand grip was decreased (right hand, about 110 mmHg). See the [online video appendix](#) demonstrating the technique.

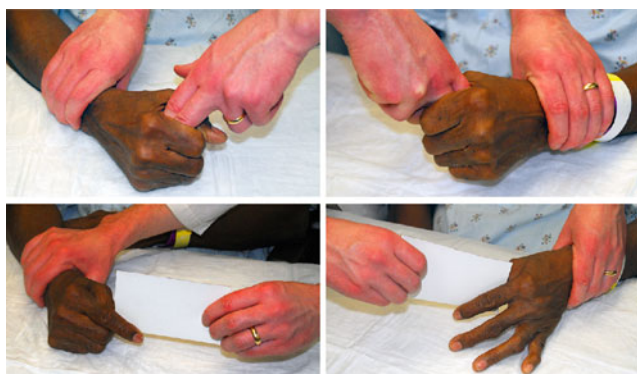


Figure 1. Hand grip assessment using index card.

Electronic supplementary material The online version of this article (doi:10.1007/s11606-013-2426-0) contains supplementary material, which is available to authorized users.

Received August 12, 2012

Revised November 27, 2012

Accepted January 4, 2013

Published online April 9, 2013



Figure 2. Hand grip assessment using sphygmomanometer.

This convenient bedside measurement technique has been used in the past to measure grip strength in patients with rheumatoid arthritis, and has been shown to be reliable when compared to the Jamar dynamometer (the reference standard for testing grip strength).^{1,2} Clinicians should be aware of this method when assessing subtle changes of grip strength.

Conflict of Interest: The authors declare that they do not have a conflict of interest.

Funding and Support: None.

Disclaimer: The opinions expressed in this article are those of the authors alone and do not reflect the views of the Department of Veterans Affairs.

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REFERENCES

1. Hamilton GF, McDonald C, Chenier TC. Measurement of grip strength: validity and reliability of the sphygmomanometer and Jamar grip dynamometer. J Orthop Sports Phys Ther. 1992;16:215-219.
2. Lansbury J. Numerical method of evaluating the status of rheumatoid arthritis. Ann Rheum Dis. 1957;17:101-107.