Clock Drawing Test in a Space-Occupying Process

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Figure 1. A, Impaired clock drawing test in a 43-year-old woman, which prompted magnetic resonance imaging. B, Magnetic resonance imaging with gadolinium reveals a space-occupying process in the left parietal lobe.

We read with great interest the article of van Munster et al on a dural fistula presenting as a treatable cause of cognitive impairment.¹ The authors demonstrated a markedly impaired clock drawing test (CDT) before treatment, which completely normalized after therapy. By presenting a case vignette, we wish to emphasize that an impaired CDT—especially in a younger individual—can be an alarming sign to prompt further examination.

A 43-year-old right-handed teacher noted difficulty in drawing graphs of functional equations during lessons. The complete clinical neurological examination including confrontation testing of visual fields was unremarkable. The mini-mental state test revealed a score of 29 of 30 with 1 point deducted for short-term recall. The CDT, however, showed marked impairment (Figure 1A). A subsequent magnetic resonance imaging demonstrated a space-occupying lesion in the

left parietal lobe (Figure 1B), which was histologically a high-grade glioma at surgery.

The CDT has achieved widespread clinical use as a cognitive screening instrument.² It complements the Mini-Mental State Examination and serves as an efficient screen for early detection of dementia and in monitoring cognitive function.^{2,3} In particular, the CDT evaluates organization and planning,⁴

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executive function,² and visual perception. In our patient, impaired visual perception due to the left parietal lobe lesion was likely responsible for the marked CDT finding.

This case reminded us that in the field of neurohospitalist medicine, an impaired CDT can be a prominent and isolated clinical finding in a left hemisphere space-occupying lesion. As demonstrated by van Munster et al, an impaired CDT can return to normal after proper treatment.¹

Authors' Note

All authors contributed equally to the presented work.

References

1. van Munster CEP, van den Berg R, Weinstein HC. A dural fistula as a treatable cause of cognitive impairment. *The Neurohospitalist*. 2014;4:111-112.
2. Shulman KI. Clock-drawing: is it the ideal cognitive screening test. *Int J Geriatr Psychiatry*. 2000;15(6):548-561.
3. Pinto E, Peters R. Literature review of the clock drawing test as a tool for cognitive screening. *Dement Geriatr Cogn Disord*. 2009;27(3):201-213.
4. Simmons BB, Hartmann B. Evaluation of suspected dementia. *Am Fam Physician*. 2011;84(8):895-902.