Measurement of jugular venous pressure
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TO THE EDITOR: Observing jugular venous pressure (JVP) is central to cardiovascular examination. Lewis, in 1930,1 was the first to report the use of the external jugular vein as a manometer for recording pressure in the right atrium. Unfortunately, some textbooks on clinical examination and many clinical teachers incorrectly state that the external jugular is unreliable for measuring JVP and that only the internal jugular should be used. The problem with this is that the internal jugular vein is located deep within the neck, where it is covered by the sternomastoid muscle and is therefore not usually visible.

Lewis used the sternal angle as a reference point, presuming that it lay 5 cm above the centre of the right atrium in all positions of the patient between lying and sitting. A recent study using computed tomography to examine 160 patients noted that the median vertical distance between the sternal angle and the mid right atrium was 5.4 cm, thus confirming that Lewis’s estimate of the sternal angle in relation to the right atrium was correct (bearing in mind that adults are taller than they were in the 1920s)2. The mean right atrial pressure is the mean of the peak and trough of the external jugular wave above the sternal angle expressed in cm H2O.

Over the past few decades, several studies have confirmed that the original findings of Lewis were correct: there is no significant difference in JVP whether it is measured using the internal or external jugular vein, and the external jugular pulse accurately reflects directly measured right atrial pressure.3 In a study of 52 patients with chronic congestive heart failure who had right heart catheterisation, elevation of the JVP showed 57% sensitivity for a raised pulmonary capillary wedge pressure (\(\geq 18\) mmHg) and 93% specificity for non-elevation of JVP corresponding with a capillary wedge pressure of \(\leq 18\) mmHg. If elevated JVP was inducible as well, sensitivity increased to 81% and specificity dropped to 80%, with a predicted accuracy of 81%.4

Generations of frustrated medical students and doctors who have stared intently at their patients’ necks awaiting that elusive flicker of the internal jugular pulse have been overlooking an accurate source of clinical information — namely the pulse in the external jugular vein. Lewis was right 80 years ago: measuring the external JVP is a valuable clinical tool and should be practised frequently.

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