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Editorial Comment

The authors state ‘...the use of the RigiScan in the evaluation of erectile function has questionable because the RigiScan device does not directly determine axial rigidity’. The RigiScan system measures radial rigidity by recording the displacement that occurs in the compressive loops in response to a 10 ounce tug force. To the extent the penis can be approximated as a thin-walled, cylindrical pressure vessel, the hoop stress which is measured by the RigiScan compressive loops is twice as large as the longitudinal stress measured by an axial buckling force load and is independent of the length to diameter aspect ratio or internal pressure, as long as the wall thickness is significantly less than the vessel radius.¹ Therefore, radial rigidity as measured by the RigiScan system is equivalent, by a constant factor, to axial rigidity within the range of measurements in which a 10 ounce tug force is sufficient to compress the penile wall.^{2,3}

Despite acknowledging the shortcoming of their study in that the tests were not performed synchronously, the authors demonstrated a high correlation between radial rigidity as measured by the RigiScan system and the resistance index as measured by duplex ultrasonography for base and tip rigidities exceeding 60%. These high rigidity values coincide with the time in a penile erection when the tunica

are in tension, both radially and axially, producing stress in the tunica wall. This data demonstrates the equivalence of radial rigidity to erectile capacity as measured by resistance index, which has been shown to be correlated with intracavernosal pressure.

The authors note that an investigator must be well aware of the clinical or scientific purpose of patient testing before determining which tests to perform. Their study further confirms the validity of radial rigidity measurements, whether measured continuously or intermittently, as a useful tool in assessing an individual's pathophysiology and his responsiveness to various therapeutic regimens.

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