Significance: The authors report the enantioselective total synthesis of three sarpagine indole alkaloids which were isolated from the plant family Apocynaceae. The route relies on a common intermediate \( A \), which is impressively accessed using key features such as a [5+2] oxidopyridinium cycloaddition and a ring expansion. The three natural products were synthesized in only eight steps starting from known materials (12 steps from commercially available compounds).

Comment: The synthesis commenced with a [5+2] cycloaddition between oxidopyridinium salt \( A \) and Aggarwal’s chiral ketene equivalent \( B \), thus yielding the desired regioisomer \( C \) in a 2:1 ratio. Next, ketone \( G \) was accessed through an intramolecular palladium-catalyzed enolate coupling of \( D \), followed by Wittig reaction, deprotection of the dithiolane, and ring expansion. The indole was introduced in the last step by a Fischer indole synthesis using phenylhydrazines with different substitution patterns to afford the three targets.