Distal radius fractures are a common orthopedic condition among elderly patients, with a predominantly female predilection. Given the increasing population and active lifestyle of elderly individuals, the number of wrist fractures seen will continue to increase. A clear goal of fracture management for these patients includes a pain-free extremity with retained normal function. Despite this clear goal, there is a lack of consensus on distal radius fracture management. The management controversy is compounded by factors that complicate standard fracture management. This includes greatly reduced bone mineral density in the elderly female population, with substantial potential for fracture displacement, resulting in a poor functional outcome. Conversely, it has been shown that functional outcomes do not correlate with poor radiographic appearance.1

Given the lack of consensus for managing distal radius fractures, Chung et al2 have undertaken an ambitious study to provide clear guidance on the management of the unstable distal radius fracture. The design was a randomized clinical trial to compare the 4 primary management strategies, including volar locking plates, external fixation with or without pinning, closed reduction with percutaneous pinning, and casting. The trial was international, taking place over the course of 4 years. The primary outcome measure at 24 months was the Michigan Hand Outcomes Questionnaire summary score, with secondary outcomes being the subdomains of hand strength and wrist motion. The randomization to treatment was adequate but challenging because of participant burden, withdrawal because of terminal illness, and loss to follow-up.

The trial2 replicated findings consistent with the literature. Malunion was experienced by 23% of patients overall, with significant variation by treatment (59.1% of patients in the casting group, 17.0% of patients in the external fixation group, 9.8% of patients in the percutaneous pinning group, and 8.0% of patients in the volar locking plate group).2 Similar to the literature, the lack of union and radiographic appearance in the casting cohort did not result in significant differences when assessing both primary and secondary outcomes at 24 months. The authors duly note that at 24 months, participants with malunion generally showed lower function than those without malunion as measured by the Michigan Hand Outcomes Questionnaire summary and domain scores, but, importantly, the small improvement was not clinically or statistically significant.2 The results are similar to their 12-month results,3 where the authors noted that the initial benefit of surgical intervention, specifically with the volar locking plate system, was erased at 12 months. When looked at for secondary outcomes, participants uniformly reached nearly 100% of strength and motion compared with the contralateral uninjured limb.

Given the findings of the current trial,2 clinicians now have a much clearer choice when it comes to distal radius fracture management. In frail, elderly patients with a sedentary lifestyle, casting clearly becomes the treatment of choice. In the highly functional patient with an active lifestyle, casting still remains an attractive option, with patients counseled that both radiographic and outward appearances do not correlate with functional outcome. In addition, we must be mentioned that casting has the advantage of avoiding general anesthesia and operative complication rates of 15% to 20%,4 which are low but present nonetheless. The challenge now becomes determining which patients truly benefit from surgical management. According to the literature,5 there will be a subset of patients, with findings including greater than 20° of dorsal angulation, 5 mm of radial shortening, dorsal comminution, ulna fracture, or intra-articular radiocarpal involvement, who may ultimately benefit from surgical intervention. The ultimate take-home message for our patients now is a
clear-cut benefit of nonoperative management for patients with distal radius fracture with outcomes equivalent to those of alternative invasive modalities for a substantial number of patients.

REFERENCES