Introduction

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The modern era of shoulder arthroplasty began in the early 1950s, when Charles S. Neer, MD, introduced a proximal humeral replacement for severe fractures. In the early 1970s, Neer began performing total shoulder arthroplasty with a monobloc proximal humeral replacement and a polyethylene glenoid component. The humeral component was fixed to the humerus with an intramedullary stem. One neck-shaft angle, 1 humeral head radius, and 2 neck lengths were available.

We cannot overemphasize Neer's contributions to shoulder arthroplasty. Over the past 30 to 40 years, however, the procedure has undergone significant changes. First, the importance of variability in proximal humeral anatomy was recognized, leading to the development of a larger variety of humeral head sizes, neck-shaft angles, and humeral head offsets. Second, humeral resurfacing became a popular alternative to humeral head replacement in select patients. Third, inconsistency in functional results of traditional arthroplasty for irreparable rotator-cuff insufficiency led to the development of reverse shoulder arthroplasty systems.

Despite these advances, there remain significant challenges, perhaps chief of which is the durability of the glenoid component. Although several factors are involved in glenoid component failure, an important step in addressing this problem seems to be to improve the wear characteristics of bearing surfaces.

In this supplement to *The American Journal of Orthopedics* are 5 articles on current trends in shoulder arthroplasty—humeral resurfacing, variable neck-shaft angles, alternative bearing surfaces, and hemiarthroplasty or reverse arthroplasty for the cuff-deficient shoulder. Our goals here are to outline the indications for and technique and results of humeral resurfacing, to make the case for variable neck-shaft angles and alternative bearing surfaces, to outline the relative indications for hemiarthroplasty and reverse arthroplasty for the cuff-deficient shoulder, and to summarize the lessons learned from early experience with reverse shoulder arthroplasty in Europe, with an eye toward subsequent improvements. We also hope that this supplement stimulates you to read more about shoulder arthroplasty and its trends. So much information is available on these topics—more than ever before. ■

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