Editorial

Current Concepts in Arthroplasty§

This hot topic issue of the Open Orthopaedics Journal deals with current concepts and topics in arthroplasty. With contributions from the orthopedic surgeons, researchers and epidemiologists, it features a few interesting articles. The articles focus on current concepts providing a comprehensive review of some topics or addressing some controversial areas in the field of arthroplasty. Arthroplasty is one of the commonest surgeries performed for the relief of refractory pain due to severe arthritis of various etiologies and improvement in functional ability and health-related quality of life of patients [1-3]. Although a variety of demographic and clinical factors impact the outcome of hip and knee arthroplasty [1, 4-9], in general the results are excellent.

One of the articles reviews the epidemiology of knee and hip arthroplasty [Singh et al.]. In this systematic literature review, epidemiologic studies discussing the utilization rates of knee and hip arthroplasty and effect of important patient factors including age, gender and race/ethnicity are reviewed. With an aging population in the U.S. and other Western countries, the utilization rates of knee and hip arthroplasty are increasing. This can lead to a demand versus supply problem if the number of trained reconstructive orthopedic surgeons available fails to increase dramatically in the next few decades. The second article by Kalore et al. addresses a clinically, important and somewhat controversial area of diagnosis and management of infected Total Knee Arthroplasty (TKA). Infection is one of the most common underlying reasons for early TKA failure and has become the number one reason for revision TKA in the U.S [10]. A variety of new diagnostic methods including molecular studies, new diagnostic radiographic tools available in addition to the traditional evaluation with synovial fluid analysis, bone scan and acute phase reactants such as C-reactive protein and erythrocyte sedimentation rate. This article reviews the evidence supporting various diagnostic modalities and treatment approaches. Certainly more research in the coming years will help us with even a more systematic approach to diagnosis and treatment of infected arthroplasty.

In the systematic review of biomarkers related to arthroplasty by Mertens et al., evidence is reviewed regarding the potential application of biomarkers to predict important outcomes after including osteolysis, aseptic loosening and infected arthroplasty. Thirty relevant studies were reviewed, with most relating to osteolysis or loosening. The study summarizes the current state-of-the-art in this field, which is clearly evolving. In another article by Dr. Sanchez-Sotelo, current state-of-the-art in shoulder arthroplasty is reviewed. The specific aspects of techniques, fixation and design, results, indications, outcomes and complications are discussed. Total shoulder arthroplasty, reverse shoulder arthroplasty and revision shoulder arthroplasty are discussed in detail with particular attention to underlying diagnoses and outcomes. Dr. Sanchez-Sotelo reviews state-of-the-art in total elbow arthroplasty in an accompanying article. This article provides a comprehensive overview of indications, outcomes, complications and issues related to technique and implant types. The two upper extremity reviews provide an up-to-date comprehensive review for practicing surgeons, residents and trainees.

It has been a privilege for me to serve as guest editor for this hot topic issue. I have enjoyed working with my esteemed colleagues in putting together this issue and have learned a lot from them in the process. With gratitude to them for their valuable contributions, I hope that this hot issue will add knowledge to the area of arthroplasty and help practicing surgeons as well as researchers.

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