Study on the Stability of Reverse Shoulder Arthroplasty

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As the world faces ageing population, patients who suffer from shoulder-related diseases are increasing. To treat these diseases, many kinds of artificial joints are operated to patients. Following this trend, various studies on artificial joints have been conducted to improve stability of implants. Despite these efforts, more than 60% of patients are suffering from many complications after the surgical procedure. Therefore inserting the implant stably is a big issue in implant surgery. In this study, tilted angle and overhanging of baseplate were selected as representative parameters for artificial joint operation, and various finite element models were developed for each case of insertion. Using these models, internal stress and relative displacement between the bone and implant are analyzed by finite element analysis. Through this study, effects of tilting and overhanging were verified and it will be helpful to decide insertion method.

Keywords: Shoulder Arthroplasty, Stability, Tilting, Overhanging, Finite Element Analysis