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Introduction of a New Guide System for Glenoid Component Placement in Reverse Total Shoulder Replacement

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Introduction and Background

To ensure range of motion and reduce complications during reverse total shoulder arthroplasty (RSA), it is important to insert each component at the appropriate angle and position. However, when the glenoid fossa is highly deformed, it is often difficult to accurately place the baseplate. In recent years, various methods have been devised for this purpose, such as preoperative planning using software, and the use of PSI guides and navigation systems for each case. In this study, we developed a simple guide for the placement of the baseplate on the glenoid side and present its application.

Material and Method

The guide has four fulcrums, one of which is lengthened so that the guide pin can be inserted at a fixed angle to the fossa surface. Five types of guides with angles of º, 5º, 10º, 15º, and 20º can be selected according to the case. Preoperative software is used to determine the guide's insertion position (distance from the bottom) and to determine the angle in which it should be inserted.

75 cases in which RSA was performed using this system in 2022 or later.Differences in version and inclination were measured between preoperative planning and postoperative planning using CT.

Results

The difference in version was 1.6±2.5ºand that inclination was 1.9±2.2º between preoperative and postoperative planning.

Conclusions

This guide was useful in accurately positioning the scapular component preoperatively. Preoperative PSI guides require a certain period of time and cost, and navigation systems have disadvantages such as limited installation methods and models. This guide has the advantage of being inexpensive and can be used at any time. We believe that this guide will be useful when a reverse shoulder is used in acute situations such as fractures.