

Abstract:

Drawing on long-term clinical experience, the dissertation provides an overview of the options for the reconstructive surgery of irreversibly damaged elbow joints and the individual structural directions in the development of total elbow replacements.

The clinical study focuses on the comparison of the unconstrained Souter-Strathclyde elbow implant, which has been used at our workplace since 1987, and the semiconstrained Coonrad-Morrey implant, which we started to use in the nineties. The disadvantages of the Souter-Strathclyde implant consist of a relatively complex surgery technique and narrower indication which does not permit larger primary instability of the operated elbow and large bone defects. Due to these reasons in recent years the Coonrad-Morrey total elbow replacement

has been the preferred option at our workplace. The main problem as regards the long-term survival of this implant is especially the wear of the polyethylene bushings of the fl oppy hinge.

This can be solved through an early replacement of this hinge before substantial abrasive wear develops ultimately leading to the loosening of the whole implant. We have elaborated a methodology that maps the condition of the polyethylene bushings and at the same time examines the integration of the humeral and ulnar component in the bone bed. Therefore, a simple replacement of the hinge mechanism may be indicated early thus significantly extending the survival of the implant. The measurement method is based on data readings from computer tomography of the elbow joint in several positions. We are using customized software to measure the relevant data for the evaluation of the condition of the hinge and the integration of the stems.

Klíčová slova:

Endoprotéza loketního kloubu, nestišťený implantát, polostišťený implantát, volný závěs, polyetylenová vložka

Key words:

Total elbow replacement, unconstrain implant, semiconstrain implant, fl oppy hinge, polyethylene bushings