According to our own statistic, the elbow joint was affected in 53% in a consecutive serie of 300 RA patients with an average duration of the disease of 10 years. Whereas full extension is lost early in the stage of pure synovitis, it is amazing to see that more than 85% of the cases of which many are severely affected, maintain a flexion of minimum 100°. This and the fact that only exceptionally both elbows are involved at the same time to such an extent that normal daily activities become impossible, explain why elbow arthroplasty is indicated relatively seldom, possibly less than shoulder arthroplasty. Another reason is an amazingly high success rate of late elbow synovectomy. This can be proved by analyzing the results using our own radiodorsal approach for total elbow synovectomy. This incision is briefly shown.

The early experiences with elbow replacement were made with fully constraint hinges. Failures occurred in a very high percentage. This can be proved by our own statistic with Mark I of the GSB-prosthesis. Loosening due to enormous torsional stresses and rather poor possibilities of fixation in the severely destroyed bone were the main causes. Fully constraint hinges should therefore not be used any more.

Two types of prostheses are now commonly used for elbow arthroplasty: 1. Condylar prosthesis with or without intramedullary fixation 2. Non constraint hinges

Both have their specific advantages and disadvantages. Condylar prostheses are mostly more difficult to implant if deformities have to be corrected and if bone stock is poor; on the other hand stress on its components is more effectively reduced through capsule and ligaments provided they are sufficiently stable. If not, subluxation or even dislocation are occasionally to be expected.

This is not known in semiconstraint hinges with are more easy to implant even in far advanced elbow destruction. On the other hand stress on the bond is usually higher so that these joints cannot dispense with stem fixation.

The GSB-prosthesis Mark III is a non constraint, fully lubricated hinge joint which requires minimal bone resection and leaves therefore open large retreat possibilities in case of failure. Moreover it rests with flanges broadly on the preserved humeral condyles reducing thereby the stresses on the intramedullary fixation.

The results obtained with this
method are discusses. Flexion range is mostly normal, but extension lack is around 30°. The operative technique is presented, which is made relatively easy through the use of special instruments. Due to minimal bone resection, retreat possibility is made easy.