

# Introduction

Rheumatic diseases often lead to joint pain and deformities which may result in major disability. To some extent, these problems can be treated by surgery. In recent decades, a surgical speciality has developed to treat joint destruction and deformities caused by rheumatic diseases. Surgical procedures involve either direct reconstruction of joints and surrounding structures or replacement of joints or damaged bone with various types of prostheses. In Sweden, rheumatic surgery is performed mainly at the orthopedic departments and the hand surgery units.

*The SBU Project Group was asked to:*

describe the methods used in rheumatic surgery,  
review the scientific literature in the field,  
survey the extent to which rheumatic surgery is used in Sweden,  
identify the costs and the potential cost effectiveness of rheumatic surgery.

The project group confined the scope of the assignment to cover patients diagnosed with chronic rheumatoid arthritis, psoriatic arthritis, and spondylitis (Bechterew's disease). Mainly, it is these conditions for which surgery can be motivated.

Assessing the effects of rheumatic surgery is complicated since the underlying disease is chronic and progressive, and attacks multiple joints. The natural course of the disease is unknown in individual cases. In some cases, surgery may activate underlying inflammatory conditions, while in others it may render the course less severe. The literature usually presents surgical outcomes, and medical outcomes, as retrospective clinical reports. Only a few major studies cover a large number of patients who are followed for different lengths of time.

Since the methods for measuring results of surgical procedures are not well standardized and the disease profile varies considerably from case to case, it is difficult, or nearly impossible, to synthe-

size the information into a meaningful structured review or meta-analysis. In rheumatic diseases, analyses of clinical profiles and the outcomes from various types of interventions remain at a relatively early stage. The potential for a more comprehensive assessment relates only to the issue of determining quality of life (via a structured questionnaire survey).

Part I of the report (*Scand J Rheumatol 1999; 28: Suppl 110*) reviews only those aspects of rheumatic surgery which play a role in the assessment of surgical services. This is Part II of the report (originally published in Swedish) which includes a systematic literature review of rheumatic surgery methods. Deeper knowledge concerning the conditions involved may be obtained from textbooks or specialized literature addressing rheumatic diseases.

## Goals of surgical treatment

The goals of surgical treatment in rheumatoid arthritis are to correct deformities and/or replace joints in a way that achieves the best possible function, to reduce pain in affected joints during use, and to prevent, when possible, further deterioration of joints affected by the disease. However, surgery cannot correct the chronic, inflammatory process which characterizes the disease.

## Results of surgical treatment

It is difficult to assess the results of surgery on joints affected by rheumatic diseases, particularly since the course is influenced by the basic disease affecting the patient. Rheumatoid arthritis and subsequent general functional disability can also advance after surgery, while at the same time general symptoms from the basic disease reduce the patients demand for full strength and mobility in the musculoskeletal system.

The effects of rheumatic surgery can be measured in several ways. However, the lack of uniform systems for assessing outcomes represents a distinct disadvantage. Furthermore, patients have been followed for only a short time after surgery. Registries report on potential improvements in mobility and stability and the extent to which surgery has helped alleviate pain. Data on long-term followup after surgery is limited. Often it is difficult, if not impossible, to distinguish the effects of surgery from the effects of other concurrent, usually pharmacological, treatment.

In summary, the Project Group arrived at the following conclusions from the literature review and their own studies on rheumatic surgery in Sweden:

- Rheumatic surgery is offered in some form at nearly all orthopedic departments and hand surgery units in Sweden. Surgical treatment of patients with severe rheumatoid arthritis account for a large number of procedures, from joint replacement to removal of small, painful nodes.
- More qualified surgery is found at regional hospitals or large county hospitals.
- Approximately 40 orthopedists and hand surgeons in Sweden have specialized training in rheumatic surgery.
- At many hospitals, rheumatic surgery is limited to less than 50 operations per year.
- Followup of the results of rheumatic surgery is rather limited.
- Generally, it is assumed that rheumatic surgery should be a collaborative effort among orthopedists, hand surgeons, rheumatologists, occupational therapists, and physiotherapists, but few teams of this type are found in Swedish hospitals.
- The direct costs for rheumatic surgery are estimated at 175 million Swedish kronor (SEK) per year, or approximately 40000 SEK per operated patient.

## **SBU – The Swedish council on technology assessment in health care**

SBU was established in 1987 as an independent public authority financed by the government. About twenty people are employed at the SBU secretariat in central Stockholm. An additional 400 researchers and experts are engaged throughout Sweden in various SBU projects. SBU also has a wide international network of experts. SBU's task is to critically review the scientific basis of methods used in health care and to evaluate their costs, risks, and benefits. The main objective is to identify effective and ineffective health practices. The SBU reports are based on critical reviews of the scientific literature. A project generally takes several years to complete.

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