

Silastic arthroplasty in rheumatoid MCP-joints

60 joints followed for 7 years

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16 patients with rheumatoid arthritis underwent Swanson silastic arthroplasty in 60 MCP-joints. After 7 (5–10) years only 8 patients had pain relief, 7

were satisfied, and 13 implants had fractured. We conclude that the effects of Swanson silastic arthroplasty deteriorate with time.

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The results in our unit of Swanson implants in 74 MCP-joints in 22 patients were reported by Jensen et al. (1986). We have now followed the surviving patients for another 5 years.

Patients and methods

Between 1979–85 resection arthroplasty using a silicone prosthesis for the metacarpophalangeal joint was used in 22 patients (80 joints) with rheumatoid arthritis. The median age at operation was 65 (35–76) years.

The indication was pain in all patients and all joints showed radiographic destruction. All operations were performed according to Swanson (1972). The largest possible implant was used. Release of the ulnar intrinsic muscle was always performed, and the radial portion of the extensor apparatus was duplicated in order to centralize the extensor tendon. The capsula was not sutured on the ulnar side. No splinting was used postoperatively. After 5 days the dressing was removed and active exercises started under supervision.

At follow-up 7 (5–10) years post-operatively, 6 patients with 20 implants had died. This left 14 women and 2 men with 60 implants to be examined. The following criteria were used for evaluation: subjective assessment of pain relief, objective assessment of the active range of motion, radiographic evaluation of ulnar deviation, failure of the implant and bone erosions, as compared to the preoperative radiographs.

Results

The median total passive range of motion had increased from preoperatively 45 degrees to 60 degrees at follow-up, but the active range of motion was only 30 degrees. Ulnar deviation was more than 10 degrees in 49 joints preoperatively. At follow-up, 39 of these were improved, 4 unchanged and 6 impaired. Pain relief was acceptable in 8/16 patients. 10 patients regarded their hand function as better than before the operation. No sign of silastic synovitis in terms of synovial thickening and erythema around the joint was found. Bony erosions were found around 13 implants, most often in the proximal phalanx. There were 13 implant fractures in 5 patients. Only 1 of these was dissatisfied with the hand function and had more pain. A recurrence of volar displacement was noted in 2 joints. 9/16 patients (21/60 joints) were not satisfied with the result.

Discussion

As in previous reports on silicone arthroplasty, the poor preoperative range of motion was improved and the ulnar deviation, as well as the volar displacement, were reduced (Gschwend 1980, Swanson and Swanson 1984, Wilson et al. 1993) and this improvement was unchanged at a follow-up 7 years later. However, 4 patients had more pain than before the operation. In series with a longer follow-up period pain relief has been found to persist together with the improved mobility and the reduced ulnar deviation (Maurer et al. 1990, Wilson et al. 1993). The complications included fractures of the

implants, which occurred in 9/65. In 1972 Swanson reported that implant fractures occurred in fewer than 2 percent; according to Swanson and Swanson (1984) most fractures will occur within the first 2 years. Others have reported that the incidence of fractures increases with the observation time (Hagert et al. 1975, Kay et al. 1978). This was confirmed in our series, as we found fractures in 5 patients, whereas 5 years earlier we had only 1 patient with fractured implants. The laxity of ligaments and bone resorption could be responsible for the loosening and fracture of the implants. The high number of fractures in our series might have been caused by the use of too small implants, careless preparation of the bone or early mobilization without the recommended dynamic splinting for 6 weeks (Swanson and Swanson 1984).

The active 30 degrees range of motion was approximately the same 2 and 7 years after operation. However, the median passive range of motion had increased from 30 to 60 degrees. Most of the patients had had physiotherapy since the operation, which could explain the good range of motion, but probably also the recurrence of pain.

We conclude that, after a median of 7 years, the results after Swanson silicone prosthesis in metacarpophalangeal joints are not satisfactory, and the method has, in fact, been abandoned in our department.

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