Long Term Clinical Outcomes of Silastic, Hinged Great Toe Implants (with titanium grommets) for the Treatment of Hallux Rigidus in Females

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Summary
The purpose of this study was to evaluate and report on the long term, clinical outcome and survival of total 1st metatarso-phalangeal joint (MTP) hinged toe, silicone implants, with titanium grommets, for use in female patients with hallux rigidus deformity.

Introduction
Management of late-stage degenerative joint disease of the first MTP is a complex topic that is frequently the source of debate amongst foot and ankle surgeons. One of the most contested of these treatments is implant arthroplasty of the first MTP. In 1971, we reported on the early success of a silicone implant (introduced by Alfred Swanson, MD), for the treatment of “subluxated hallux valgus deformity”. After a few years, it was obvious that this implant would deteriorate, causing detritic, silicone synovitis, bone cysts, and loss of bone stock. The implant, named by the acronym, “Hemi-toe”, was soon replaced by Swanson with a more robust replica of the metacarpo-phalangeal joint, hinged silicone implant used in patients with rheumatoid arthritis of the fingers and wrist. Thereafter, following positive outcomes of the use of titanium grommets to protect the bone-implant interface, we participated in a “Swanson Hinged Great Toe, Silastic Implant with Titanium Grommets” clinical trial to establish safety and efficacy of this device. For the past 35 years, we have used this device, almost exclusively, as an option for female patients between the ages of 45-75 years old, who had a diagnosis of end stage hallux rigidus deformity and who refused the option of great toe arthrodesis.

Methods
Medical records, from consecutive patients, who underwent a Silastic Hinged Toe (with titanium grommets) operation, between January 1978 to December 2002 were retrospectively reviewed. A total of 96 patients (122 feet) were included in the study that had at least 24 months of follow-up. Clinical data was recorded, included post-operative range of motion and the clinical rating from the American Orthopaedic Foot and Ankle Society for Hallux MTP scale. Post-operative complications and revision rate was also recorded.

Results
The average age of the patients was 58.9 years with an average follow-up of 82.6 months (range 24 to 208 months). Of 96 patients, 54 patients had a mean AOFAS rating 91.6 while the mean post-operative range of motion was 47.2 degrees of dorsiflexion and 8.7 degrees of plantarflexion. There was a 36% minor complication rate which resolved in time (chronic swelling, 2nd metatarsalgia, minor wound dehiscence) and 16% of patient’s required revisional surgery to the 1st MTP implant.

Conclusions
Our long term series demonstrated that there is a high survival rate (84%) and satisfaction rate (88%) in the long-term results using a Silastic Hinged Toe 1st MTP implant for hallux rigidus in females between the ages of 45-75 years old.