

Use of the S-MART Tourniquet in Total Elbow Arthroplasty

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This study evaluates the use of a sterile, single use silicone ring exsanguination tourniquet. Used as an alternative to elevation/wrapping and a pneumatic tourniquet, the S-MART device (OHK Medical Devices, Haifa, Israel) is designed to provide exsanguination, arterial flow occlusion and sterile stockinette application in one movement.

A total of 20 total elbow replacements were done using the S-MART tourniquet over a three-year period by the senior author (MF). Total tourniquet time ranged from 1 hour 20 minutes to 2 hours. No intra-operative or early postoperative problems were encountered. Follow up at 2 and 6 weeks revealed no wound complications or neurological complications. Patients were followed up for one year after the surgery.

It is paramount in elbow replacement to have a good bloodless operative field without the tourniquet encroaching upon the surgical field and increasing the risk of infection in elbow arthroplasty. We conclude that use of the S-MART tourniquet in total elbow arthroplasty is convenient and safe, with no complications recorded in our study group. The narrow width of the tourniquet allows better draping of the limb without compromising the surgical field. As S-MART is a sterile tourniquet it reduces the risk of infection. Combined exsanguination provides a better haemostasis as compared to the pneumatic tourniquet. This is the first study in literature looking at the use of this novel tourniquet in total elbow arthroplasty.