

**THE SURGICAL OUTCOMES OF DEEP SCLERECTOMIES PERFORMED AT A JOHANNESBURG ACADEMIC HOSPITAL** (By Dr Irene Marthina Freed)

**ABSTRACT**

**Purpose:** The primary aim of the study is to determine the overall outcomes of deep sclerectomy surgery at Charlotte Maxeke Johannesburg Academic Hospital (CMJAH) and to compare it with that described in the available literature. Important outcomes considered are: (1) those denoting surgical success (acceptable IOP control and glaucoma non-progression – with or without drop therapy); (2) the need for secondary procedures (such as yag goniotomy); (3) the occurrence of surgical complications (such as flat anterior chamber, hyphaema, hypotonous maculopathy and hypotonous choroidal detachment); and (4) those indicating surgical failure (the requirement for repeat surgery and loss of light perception vision). Secondary aims are to describe the patient population undergoing deep sclerectomy surgery, as well as their underlying glaucoma disease profile.

**Study Design:** Retrospective record review  
**Methods:** Patient records, including their intra-operative notes, were reviewed. The records reviewed, were those of patients attending the CMJAH glaucoma clinic and who underwent DS surgery between 01/06/2014 and 31/07/2015, with follow up extending up to 45 months post surgically. For the purpose of this study, important terms were defined as follows: success (mean IOP  $\leq$  18 without medical drop therapy); qualified success (mean IOP  $\leq$  18 with medical drop therapy OR mean IOP  $>$  18 without medical drop therapy); qualified failure (mean IOP  $>$  18 with medical drop therapy) and failure (Loss of light perception vision or requirement for repeat surgery)

**Results:** A total of 57 cases were reviewed. Within these, sex was comparably distributed (52.6% male; 47.4% female). In terms of race distribution, the majority of the cases reviewed were black (77.2%), 14% were white, 5.3% coloured and 3.5% Indian. In terms of the underlying glaucoma profile, most cases had POAG (61.4%) followed distantly by PXG (21.1%) and the greater majority had advanced disease with CDR of  $>$ 0.8 in 82.4% of cases and  $>$ 0.9 in more than half (59.6%) of the cases reviewed. 100% of all DS surgeries performed received adjunctive intra-operative MMC. Surgical success rates and qualified success rates at CMJAH were 85% at 36 months and 62% at 45 months post-operatively. Overall, the mean surgical success rate was 89.8%. Success rates of the supervised junior surgeons were comparable to that of the senior surgeon. Adjunctive laser goniotomy was performed in 69.2% of cases – the majority being done between months 1 and month 3 post-operatively. Complications were rare with no cases developing flat anterior chambers, only 1.9% presenting with hyphaema and choroidal detachment and 9.6% developing hypotonous maculopathy. Importantly, all these complications resolved spontaneously with medical therapy alone, except for 2 cases with hypotonous maculopathy – 1 of which had a bleb leak and required suturing, and another case was lost to follow up after month 6. The mean overall surgical failure rate was small at only 10.2%.

**Conclusion:** Deep sclerectomy surgery at CMJAH is performed on a majority black population of equal sex distribution with advanced glaucoma, with a predominant underlying diagnosis of POAG. Deep sclerectomy surgery with adjunctive intra-operative MMC, on this group of patients, has a high success rate but may require adjunctive post-operative goniotomy. It has a low overall complication rate, with specific reference to hypotony associated complications. It has predictable and reproducible overall results. As such DS surgery is a viable first line surgical option in our local glaucoma population as the surgical outcomes at CMJAH are comparable with those described in literature