SUMMARY

Background: Surgery has evolved over the past twenty years. Conceptual and technical advances have helped improve the surgical rehabilitation of Graves’ orbitopathy. A historical comparison of methods and approaches has shown clear progress.

Summary: Surgical rehabilitation of Graves’ orbitopathy is traditionally staged: orbital decompression $\rightarrow$ extra-ocular muscle surgery $\rightarrow$ eyelid repositioning $\rightarrow$ and the soft tissue volume and redraping. Improvements in techniques have evolved from the problems that historical methods have presented, and an evaluation of each will help appreciate the improvements that have been made for patient care.

Conclusion: Incremental improvements in surgery for thyroid eye disease have been made over the past 20 years. However, thyroid-related orbitopathy will always be limited by fibrotic and structural changes that may be camouflaged by surgery, but never cured. Future advances in medical management will be derived from the laboratory.

COMMENT

Doctor Robert Goldberg has accumulated a vast experience in treating patients with Graves’ orbitopathy (GO) using various surgical approaches. In the present article, he reviews the progresses accomplished in the last two decades and states – with great modesty – that “when thinking back to my own practice, I wish I knew twenty years ago what I know now”.

With regard to orbital decompression, traditional indications were extreme proptosis (with corneal exposure) and compressive optic neuropathy, but Dr Goldberg also insists on the gradual evolution that has occurred in today’s indications such as, for instance, cosmetically disfiguring proptosis. On a technical point of view, he describes new areas of bone removal, removal of orbital fat, and advances in the types of incisions. All of the orbital walls can be accessed through small or hidden incisions, and the majority of orbital decompressions in his institution (UCLA) are performed under local anesthesia, on an outpatient basis.

With regard to the surgery of strabismus, better understanding of the anatomy and physiology of orbital connective tissue has allowed for “small incremental improvements” in this type of surgery. Unfortunately in bad Graves’ strabismus, with damaged and fibrotic extra-ocular muscles, “even the best strabismus surgeon cannot re-create normal fields of binocular vision”. Another important point concerns the improvement of surgical techniques aiming at decreasing the rate of de novo strabismus consecutive to orbital decompression.

With regard to eyelid repositioning surgery, the author considers that the overall results are good, although some unpredictability persists and sometimes more than one stage of surgery is required. The author mentions that, at least in selected cases, they have been able to
perform eyelid repositioning at the same time as orbital decompression, with good results, instead of carrying out this type of rehabilitation as a ‘third stage’ procedure. Finally with regard to soft tissue redraping and procedures to address the esthetic sequelae of GO, the author describes progresses made in esthetic surgery. For many patients with GO, esthetic surgery involves not cutting out muscle skin and fat, but rather repositioning or adding volume into periorbital hollows, skin treatment to address loss of skin elasticity & subcutaneous volume, use of Botox, etc. In summary, surgical techniques have become less invasive and allowed surgeons to expand the range of patients with GO who are candidates for rehabilitation surgery.

On a personal note, I would add that the availability of precise orbital neuro-radiological imaging has constituted a tremendous progress in the last two decades for the endocrinologist, the ophthalmologist, and the rehabilitation surgeon. Also, medical progress in the management of patients with Graves’ disease have been followed by a clear decrease in the occurrence of severe, disfiguring, ‘malignant’ exophthalmos. Besides technical advances in surgical approaches, new breathtaking advances in the management of GO are going to have to come from progresses made in the laboratory.

(Daniel Glinoer, M.D.; Ph.D.)

See Figure below

![FIG. 7. Esthetic rehabilitation following decompression. Top: preop. Center: following orbital decompression and eyelid repositioning, eyelid function and closure is improved. Bottom: following esthetic surgery to restore mid-face volume, the lower eyelid appearance is more normal. (© Jules Stein Eye Institute, used with permission.)](image-url)