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DECOMPRESSSION SURGERY AND ORBITAL FAT REMOVAL

Orbital decompression surgery aiming to enlarge the bony orbit and/or to decrease orbital volume is known for about a century. In former times surgery was restricted to sight threatening situations but in the last decades indications have been extended to disfiguring exophthalmos and/or painful orbital pressure sensation.

Bony orbital decompression (BOD) involves the resection of a single or multiple walls of the orbit in the sense of a graded orbital decompression depending on the severity of exophthalmos and the presence or absence of optic nerve compression in the orbital apex. In non-sight threatening situations one tends to first decompress the lateral orbital wall because it is least associated with the risk to induce postoperative motility disturbances and diplopia. With this technique a mean exophthalmos reduction of about 3mm can be achieved. For more exophthalmos reduction additional orbital walls need to be addressed, e.g. the medial or inferomedial orbital walls. In case of optic nerve compression due to enlarged extraocular muscles a sufficient decompression in the deep orbital apex can only be achieved via a medial wall decompression. Fat resection orbital decompression (FROD) as a primary or combined treatment with BOD can be particularly well suited for patients who have a predominant volumetric increase in orbital fat. Therefore careful preoperative orbital imaging is needed to discriminate between the tissue entities of predominant muscle volume increase and predominant fat volume increase. Main complications of the primary FROD technique are motility problems usually causing diplopia with incidence rates of new onset diplopia of about 30% though some newer studies reported much lower incidence rates. Nevertheless, assuming sound application of anatomical principles, orbital fat decompression can be a worthwhile method –especially in combination with BOD- for achieving additional exophthalmos reduction.

In summary a number of relatively safe surgical procedures for orbital decompression surgery currently do exist. Recent trends in orbital decompression surgery account for the patients preoperative characteristics and needs. The choice of technique should be based on anatomic findings and clinical characteristics and should intend to limit major complications, as the risk for new onset diplopia or worsening of pre-existing diplopia and creation of visible or disturbing scars that can be reduced or even avoided by camouflaging incisions (e.g. upper skin crease incision or swinging eyelid approach).

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