Revolutionizing PACG Treatment with MIGS

March 2024

Primary Angle-Closure Glaucoma (PACG) is a prevalent type of glaucoma in the Asia-Pacific region. Traditionally, Trabeculectomy (Trab) was the primary surgical choice for advanced PACG. When combined with cataracts, phacotrabeculectomy – a combination of phacoemulsification, intraocular lens implantation (PEI), and Trab – is considered highly effective. However, trabeculectomy has always posed significant challenges due to its potential complications.

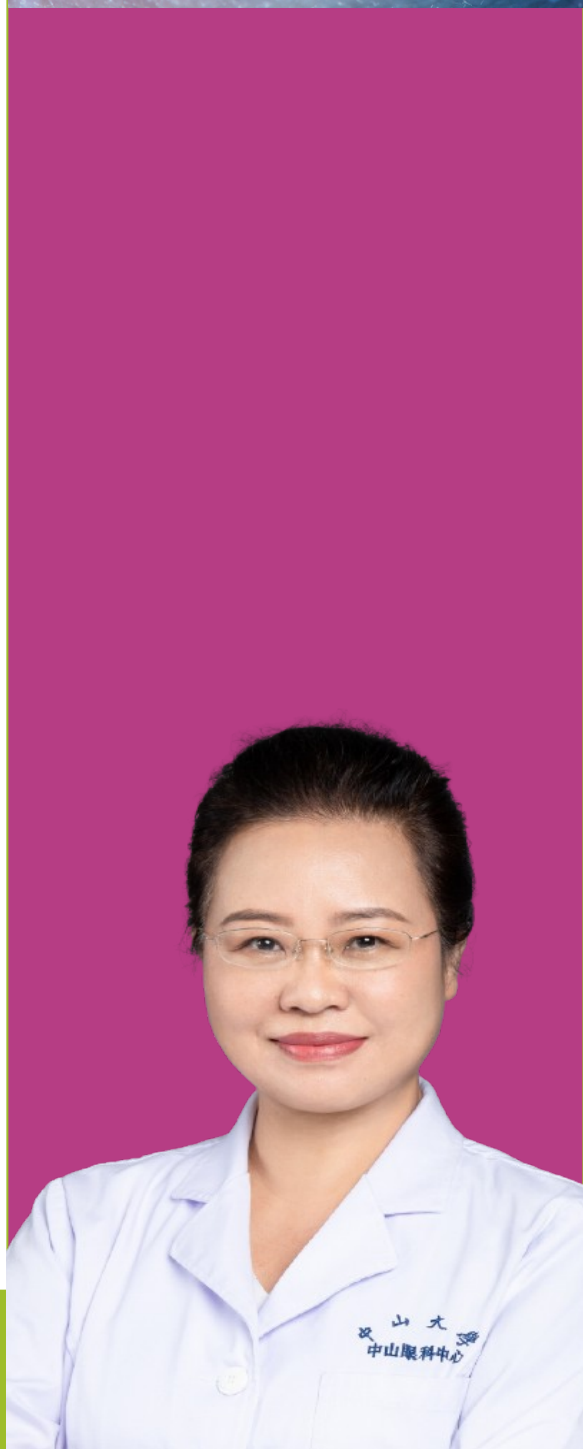
Minimally invasive glaucoma surgery (MIGS), distinguished by its precision in reducing intraocular pressure (IOP), microincision technique, minimal trauma, fewer complications, a shorter learning curve, and quicker patient recovery, is solidifying its critical role in glaucoma treatment. Over the last decade, MIGS has become the mainstream surgical choice for primary open-angle glaucoma (POAG).

Fortunately, there is growing evidence that MIGS is an emerging, promising alternative for managing PACG. Techniques like goniotomy (GT), also known as "ab interno trabeculotomy" or "Schlemm's canal incision," have significant advantages, especially when combined with other procedures. Their effectiveness, safety, minimal complications, simplicity, and short operation times make them appealing. Observational studies have demonstrated that phacogoniotomy, which combines PEI, goniosynechialysis (GSL), and 120-degree GT, is effective in treating PACG. In a multicenter, non-inferiority randomized controlled trial, Zhang and colleagues found that phacogoniotomy is not inferior to phacotrabeculectomy, suggesting it as a primary treatment option and providing Level-1 evidence for the minimally invasive surgical treatment of PACG. Another ongoing randomized controlled trial (RCT) is comparing "surgical peripheral iridectomy (SPI) + GSL + GT" with traditional trabeculectomy, likely to transform the current PACG treatment paradigm.

In fact, through PEI+GSL, in addition to GT, other MIGS methods like trabecutome, iStent, and XEN can also effectively reduce IOP in PACG patients. These surgical approaches have been widely adopted in mainland China and parts of the Asia-Pacific region, gaining popularity for their simplicity and efficacy. It is foreseeable that PEI+GSL+GT and SPI+GSL+GT will become future surgical trends for PACG.

Xiulan Zhang M.D., Ph.D

Zhongshan Ophthalmic Center, Sun Yat-sen University,
Guangzhou, China; zhangxl2@mail.sysu.edu.cn



The field of glaucoma surgery is rapidly evolving towards minimally invasive techniques. The advent of emerging MIGS or combined surgical procedures for PACG indicates that the treatment of this condition has entered an era of minimally invasive approaches, which all glaucoma surgeons should consider mastering and incorporating into their practice. It is hoped that above high-caliber studies will revolutionize the existing PACG treatment paradigm, completely moving away from trabeculectomy or phacotrabeculectomy, and advancing towards minimally invasive surgery.