

## ***Introduction***

Not surprisingly anaesthesia for ophthalmic surgery has undergone very major changes over the previous two centuries. The discovery of local anaesthetic agents facilitated ophthalmic surgery and in due course general anaesthesia followed and to a great extent replaced local anaesthesia techniques. Local anaesthesia re-emerged and gained popularity towards the end of last century and is continuing to progress and grow in both applications and popularity. The most commonly performed ophthalmic surgery is cataract extraction and lens implant, which is routinely performed under local anaesthesia. (*Chandra, 2010*)

In 1884, Koller demonstrated the effectiveness of topical cocaine to abate the pain associated with ophthalmic surgery. Later Knapp injected cocaine within the orbit to achieve profound analgesia and akinesia of the globe. Turnbull reported a method of instilling local anaesthetic in the episcleral space. After this there are sketchy reports of a variety of needle-based anaesthesia techniques. A proper and documented description of needle block dates back to Atkinson who popularized it as classical retrobulbar or Atkinson's technique. (*Dowd, et al., 2006*) Classical retrobulbar was commonly used until Davis and Mandel introduced peribulbar block in late 1980. Since then, the needle blocks have undergone various changes based on published literature. (*Saha, et al., 2008*)

While several new local techniques have been introduced over the past few years, none is perfect. The techniques encompass topical, needle-based anaesthesia (extraconal, intraconal and combined intraconal and extraconal blocks) and more recently cannula-based anaesthesia (sub-tenon's block) (*Rodrigues, et al., 2008*). Intraconal block, better known as retrobulbar

injection, remained the mainstay of ophthalmic local anaesthesia for much of the 20th century. Regrettably although the complication rate was low, they were major injuries, and the block became associated with hematoma, nerve damage and blindness and even, albeit very rarely, brain-stem anaesthesia. Extraconal (peribulbar) block was introduced as a safer alternative to intraconal block as it should not enter the muscle cone and for many years was by far the preferred technique. Unfortunately it is also associated with complications such as hematoma and even ocular perforation (*Gaubas, et al., 2007*). Medial peribulbar block is usually performed to supplement inferotemporal retrobulbar or peribulbar injection, particularly when akinesia is not adequate. A 25G or 27G needle is inserted in the blind pit between the caruncle and the medial canthus to a depth of 1.5 cm to 2.0 cm. Three to 6 cc of local anaesthetic agent is usually injected. Some authorities use the medial peribulbar as a primary injection technique for anaesthesia, particularly in patients with longer axial lengths. (*Chandra, 2010*).

Some practitioners prefer to insert the needle through the inferior conjunctiva instead of skin. This is an acceptable technique, especially since the conjunctiva can be anesthetized with topical anaesthetic, which avoids the need for raising a skin wheal or injection of dilute local anaesthetic before the main injection through the skin. Transconjunctival injection can be difficult for some patients, however, especially for those who blink frequently or have short palpebral fissures or have exceptionally deep-set eyes. In these patients, the transcutaneous approach may be easier. (*Allen, et al., 2008*), sub-Tenon's block has now become common and is a relatively safer technique. Nevertheless there are complications associated with the technique but with a much reduced incidence. The place of general anaesthesia has become far more limited still and in current climate it tends to be used for specific indications and under special circumstances. (*Goswami et al., 2007*).