

In this issue of our newsletter, Dr Harry Leung, our paediatric ophthalmologist, highlights the recent advances in the area of paediatric ophthalmology and strabismus.



Paediatric Ophthalmology and Strabismus Update

1. Botox as primary treatment in Infantile Esotropia

Botulinum toxin (Botox) injection is now becoming an increasingly acceptable primary treatment in infantile esotropia. Recently, a large prospective study published in the Journal of American Association for Paediatric Ophthalmology and Strabismus (JAAPOS) showed that Botox achieved a similar success rate compared with surgery in infants with small to moderate angle esotropia. The advantages in Botox injection is it requires a shorter general anaesthetics, a less invasive procedure and injections can be repeated. I believe Botox is a good alternative treatment in this condition, especially those infants who presented early and have relatively smaller angles.

2. Improvement in motor development after surgery for Infantile Esotropia

Another interesting aspect of infantile esotropia is the link to motor developmental delay. Researchers in the US recently assessed the effects of surgery on development of motor milestones in 161 infants with infantile esotropia. Before surgery, these infants have delays in both fine motor skills (e.g. handling a bottle or grasping a toy) and large muscle skills (e.g. sitting, standing and walking). The developmental delays were noted as early as four to five months of age and persisted at ten months. The fine motor skills were particularly affected, suggesting that normal binocular vision may be important in performing such tasks. After esotropia surgery, not only did the infants show no delays in developmental milestones, but they actually had a faster rate of development. In other words, the motor skills of infants with esotropia may 'catch up' to that of normal infants after surgery. This study suggests that early surgical intervention for infantile esotropia may benefit not only visual development, but also the child as a whole.

3. Bupivacaine as a new treatment for Strabismus

Bupivacaine is an interesting and new treatment for strabismus. Bupivacaine is a local anesthetic agent that has been shown to enlarge and strengthen extraocular muscles. This leads to the trial of Bupivacaine in an attempt to treat strabismus. Several small clinical studies have shown an improvement of about 10 prism diopters in patients with horizontal comitant strabismus. There was good correlation between alignment change and the amount of muscle enlargement demonstrated on MRI scan. This is a promising new treatment for squint because in the past, injection therapies only came in the form of Botox which can only weaken the action of the muscle. In contrast, Bupivacaine may strengthen the muscle. The effect of Bupivacaine also appears to be longer lasting than Botox. This is particularly useful in treating smaller angle squint. I look forward to hearing more about the evolution of this new technique, including its effects in different types of strabismus (e.g. incomitant squint) and the optimal dosage for treatment.

4. Gene therapy in retinal dystrophies

Leber Congenital Amaurosis (LCA) is a congenital retinal dystrophy that affects roughly 1 in 18000 births. These children typically have congenital nystagmus and very poor vision from birth. In the past, LCA is not amenable to treatment. Due to recent advances in molecular genetics, many of the genes causing this disease have been identified. This provides an opportunity for gene-based therapies to treat this condition. Preliminary clinical trials have shown that gene therapy is safe and can improve certain aspects of visual function in patients with LCA caused by a specific gene mutation. Gene therapy is an exciting and rapidly advancing treatment in genetic eye diseases. I expect in the future there will be the introduction of novel gene therapy into treatment of different forms of retinal dystrophies.

5. Propranolol as new treatment for Periorcular Haemangiomas

Haemangiomas are benign vascular tumours that can be found in the peri-ocular area since early infancy. They can be fast-growing and often cause amblyopia due to a combination of ptosis, induced astigmatism and strabismus. Smaller haemangiomas localised in the eyelid may be removed surgically, but larger ones are traditionally treated with oral steroid or other chemotherapy agents. These systemic drugs do have significant potential side effects. Propranolol is a commonly used drug to treat hypertension and heart conditions. It offers much less side effect profiles than steroid or chemotherapy. Propranolol has been studied in recent clinical trials to treat periorcular haemangiomas. The results are promising. Not only is it a safe treatment, it is also effective in shrinking periorcular haemangiomas. The mechanism of action of Propranolol in the treatment of haemangiomas is still not fully understood. One theory is that it simply decreases blood supply to the tumour and therefore reduces the size of the lesion.

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Our surgery is conveniently located between the Greek Orthodox Church and the Kogarah Council Chambers on Belgrave Street, Kogarah

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