

## **FOURTH NERVE PALSY**

Fourth nerve palsy is a paralysis of cranial nerve four that innervates the superior oblique muscle of the eye. This muscle is primarily responsible for intorsion, and secondarily for depression of the eye.

### **HOW IS FOURTH NERVE PALSY ACQUIRED?**

Fourth nerve palsy may either be congenital or acquired. Although birth trauma is an unlikely cause, it is a possible etiology for the congenital variety. The acquired type is more common in older children or adults who sustained a closed head trauma, even in the mildest form such as brain concussion. A history of loss of consciousness is very common.

### **HOW DOES THIS CONDITION PRESENT?**

Due to the chronicity of the problem, a child with the congenital type develops an abnormal head posture to compensate for the effect of the paralysis of ocular muscle movement. The child usually has a head tilt and face turn opposite the affected side, and a chin-down position. Although bilateral involvement is commonly found in the acquired variety, it could be asymmetric, presenting with the classic abnormal head posture just mentioned. However, in the rarer occasion of symmetric involvement, the patient would only have a chin-down position because the effect of the bilateral involvement on head posture cancels each other. Double vision or diplopia is more commonly found in the acquired type, particularly in the reading position. On the other hand, children with the congenital variety do not complain of diplopia due to suppression of the image on the affected eye. Amblyopia or lazy eye, as well as neck muscle contracture opposite the affected side, are not unusual in these cases.

### **WHAT ARE THE TREATMENTS?**

The most common complaint among patients with the acquired and congenital type is double vision and abnormal head posture, respectively. Adults with the condition usually cannot tolerate the double vision at near. Surgery on the overacting and/or contracted eye muscle(s) in one or both eyes, depending on the results of eye movement examination and head tilt test. The more chronic the condition, the more muscles are affected. The corrective surgery can usually be done in one stage. However, a second surgery is usually necessary in the case of asymmetric involvement or masked bilateral involvement. The apparently unaffected or less affected eye becomes more obvious after doing corrective surgery on the more affected eye.