

Mini Review

DUANE'S RETRACTION SYNDROME – easy to understand

ABSTRACT

This paper describes about simplified techniques to understand Duane's Retraction Syndrome for optometrists, ophthalmologists and medical students.

KEYWORDS:

Duane's Retraction Syndrome, co- contraction syndrome, 6th nerve agenesis.

INTRODUCTION

Duane's Retraction Syndrome mainly occurs due to underdevelopment of the 6th cranial nerves and underdevelopment of nucleus. It's another name is Co- Contraction Syndrome. The meaning of co- contraction is "The two muscles will be contracted simultaneously during any horizontal movement". The stimulation which comes from the 6th nerve to lateral rectus muscle, will simultaneously stimulate the medial rectus muscle also. But according to its function and nerve supply it is contradictory.

Duane's Retraction Syndrome is classified as follows: (From most common to the least common)

DRS type 1 (most common)

DRS type 3

DRS type 2

DRS type 4 / Synergist movement (least common)

DRS TYPE 1:

Here the eye will be adducted more as compared to abducted. Because here medial rectus will be stimulated more as compared to lateral rectus. This type is most common because it occurs due to 6th nerve agenesis so more stimulation from the oculomotor nerve will reach to medial rectus muscle as compared to lateral rectus.

DRS TYPE 3:

Here equal amount of abduction and adduction occurs due to equal amount of stimulation provided to both medial and lateral rectus muscles. It is the second most common type.

DRS TYPE 2:

Here eye is more abducted as compare to adduction. Here, lateral rectus muscle is stimulated more by the oculomotor nerve as compared to medial rectus muscle. It is very uncommon condition according to muscle stimulation.

DRS TYPE 4:

It is also known as synergist eye movement. Here, during adduction eye will be abducted. But this abduction is paradoxical.

INTERVENTIONS FOR SURGERY

Surgical intervention is needed when considerable amount of misalignment in the primary position, considerable amount of head posture with narrowing palpebral fissure and significant upshoot and downshoot. It is also known as co contraction syndrome , i.e. simultaneously MR and LR is being contracted. Although amblyopia is rare in this case, but if it is present it should be treated prior to the surgery.

SURGICAL TREATMENT:**DRS Type 1**

Here eye position will be towards nose, i.e. esotropia and face turn will be ipsilateral, i.e. face turn will be towards the nose. So, in DRS Type 1, Medial Rectus muscle will be contracted and tightened, so ipsilateral medial rectus recession between 5 to 7 mm is needed. Sometimes 5 to 10 degree of overcorrection is needed. i.e. some amount of exotropia is created in primary position by the surgeon.

DRS Type 3

Here nerve stimulation is equal to medial and lateral rectus muscle from third cranial nerves. So equal amount of abduction and adduction occurs. Here face turn is away from the DRS eye. In this case, Lateral Rectus muscle is contracted and tightened , so ipsilateral lateral rectus recession is required.

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