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**Literature search results**

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**Search completed by:** Lesley Firth

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Patients with duane’s syndrome and back problems caused by abnormal head posture. Surgical interventions?

**Resources searched**

*Database search terms:* exp DUANE RETRACTION SYNDROME; duane; syndrome; “DR syndrome”; “eye retraction syndrome”; “retraction syndrome”; “congenital retraction syndrome”; “stilling-turk syndrome”; “turk-duane syndrome”; surg”; exp GENERAL SURGERY; eye; ophthalmol*; EYE SURGERY; exp OPHTHALMOLOGIC SURGICAL PROCEDURES; back; BACK; exp BACK INJURIES; exp BACK PAIN; “back problem”; “back pain”; spine; vertebr*; neck; cervical; exp SPINE; “spinal problem”; “spinal pain”; head; HEAD; exp HEAD MOVEMENTS; exp POSTURE; “head tilt”; “head posture”; “unacceptable head turn”; “head turn”

*Google search string:* (surgical OR surgery) head posture outcomes duane syndrome -agenda -minutes -blog -report

**Summary**

We have not been able to find any research in answer to your search request. There is research on surgical treatment for duane’s syndrome and in its relation to head posture, but nothing on its relation to head posture causing back problems.

**Guidelines**

*American Academy of Ophthalmology*

*Surgical Management of Duane Syndrome* 2010

*eMedicine Specialties*

*Ophthalmology* 2008
Evidence-based reviews
None found.

Published research

**Augmented vertical rectus transposition surgery with single posterior fixation suture: modification of Foster technique.**

**Author(s):** Struck MC

**Citation:** Journal of Aapos: American Association for Pediatric Ophthalmology & Strabismus, August 2009, vol./is. 13/4(343-9), 1091-8531;1528-3933 (2009 Aug)

**Publication Date:** August 2009

**Abstract:** PURPOSE: To describe a modification of the lateral posterior fixation augmentation suture of the vertical rectus muscles that is proposed to enhance the abducting vector while balancing the vertical vectors, therefore limiting stress on the sclera and preventing vertical deviations. METHODS: Full tendon temporal transposition of the vertical rectus muscles was performed on 5 patients with Duane retraction syndrome and 5 with sixth (abducens) nerve palsy. Augmentation was created by the use of a single lateral fixation suture of 5-0 polyester that incorporated the muscle bellies of both vertical muscles. The lateral rectus muscle was disinserted and attached to the lateral orbital wall in 4 of the patients with Duane syndrome. RESULTS: Four of 5 patients with Duane syndrome and 4 of 5 patients with abducens nerve palsy had successful horizontal alignment, defined as reduction or elimination of head turn, a deviation ≤ 10(Delta), and resolution of diplopia. Patients with Duane syndrome had improved adduction, elimination of co-contraction, and decreased torticollis. Patients with abducens nerve palsy were noted to have a reduction of esotropia with improved abduction. CONCLUSIONS: The modified technique limits stress on the scleral portion of the lateral fixation suture; the opposing vertical vectors are transmitted to the opposite vertical rectus muscle. Patients exhibited improved abduction, adduction, torticollis, and range of single binocular vision with a low risk of vertical deviations induced by surgery. Complications included repeat strabismus surgery (2 cases) and scleral perforation (1 case). A vertical deviation of 3(Delta) developed in 1 patient.

**Source:** MEDLINE

**Duane's retraction syndrome, a case series from Iran.**

**Author(s):** Anvari F, Hatef E, Mohammadi SF, Eskandari A

**Citation:** International Ophthalmology, August 2008, vol./is. 28/4(275-80), 0165-5701;0165-5701 (2008 Aug)

**Publication Date:** August 2008

**Abstract:** PURPOSE: To determine the relative prevalence of Duane's retraction syndrome (DRS) in a population of Iranian strabismus cases and to describe the clinical features. METHODS: Retrospectively, a population of 7,349 strabismus cases visited during 2000-2003 were evaluated for the diagnosis of DRS. Data regarding onset (noticed age), type, head turn, primary position deviation, narrowing of the palpebral fissure, leash phenomenon, refractive error, amblyopia, and history of surgery were collected. Chi-square test and Student's t-test were used. RESULTS: About 125 DRS cases were diagnosed (prevalence: 1.7%). The noticed age of the syndrome was at birth in 35.6%, during infancy in 25.4%, or childhood in 39.0%; the age at referral ranged from 3.5 months to 65.0
(median: 10.0) years. The female/male and left/right eye involvement ratios were 3:2 and 3.5:1, respectively. The syndrome was of type I in 87.0%, II in 6.5%, and III in 5.7%; 7.2% were bilateral. Horizontal deviations existed in 76.0% and vertical deviations in 12.8%. 26.8% had different degrees of amblyopia. Leash phenomenon was detected in 37.6% of cases. Head turn, primary position deviation (without turn), and orthophoria were observed in 71.2%, 13.6%, and 15.2%. Surgery had been performed in 71.2% of the cases. Vertical deviations and leash phenomenon were more common in types II and III and hypermetropia in type I (P values: 0.036, <0.001, and 0.025, respectively). CONCLUSION: Basic features of our series seem to be comparable with previous reports. The incidences of bilateral involvement and type III syndrome were lower. The proportion of cases with head turn was higher and surgery was performed more frequently.

Source: MEDLINE


Author(s): Vodickova K, Autrata R, Rehurek J

Citation: Ceska a Slovenska Oftalmologie, May 2008, vol./is. 64/3(100-4), 1211-9059;1211-9059 (2008 May)

Publication Date: May 2008

Abstract: The purpose of this comparative study was to evaluate a long-term efficacy of lateral rectus muscle resection in the affected eye of patients with Duane retraction syndrome (DRS) with esotropia and limited abduction and to compare it with bilateral medial rectus recessions. We reviewed and compared the data of the group A with 23 patients who underwent a recession-resection procedure and the group B with 26 patients in whom we performed medial rectus recessions. In each group, we evaluated pre- and postoperatively the ocular alignment, head position, ocular ductions, severity of retraction, and binocular visual field. Statistical analysis of the data was performed. Postoperatively, both groups had similar mean esotropia and mean face turns. However, the mean limitation of abduction in the affected eye was greater in the group B, mean adduction was also significantly worse in the group B. Globe retraction improved in all subjects of the group B, but worsened in 6 patients of the group A. Seventeen of 23 patients with Duane retraction syndrome, selected on the basis of esotropia, limited abduction, and mild retraction, benefited from a recession-resection procedure in the affected eye. The ability of abduction achieved higher level than in the group B after bilateral medial rectus recessions. We assume that unilateral recession-resection procedure should be performed in patients with mild retraction of the globe and good preoperative adduction.

Source: MEDLINE


Author(s): Fricke J, Neugebauer A, Russmann W

Citation: Klinische Monatsblatter fur Augenheilkunde, January 2006, vol./is. 223/1(42-7), 0023-2165;0023-2165 (2006 Jan)

Publication Date: January 2006

Abstract: BACKGROUND: A causative therapy for Duane's retraction syndrome, which is the most prominent example of connatal ocular misinnervation, does not exist. Eye muscle surgery is indicated in cases with manifest strabismus in primary position and an annoying compensatory head posture to maintain binocular single vision. Different surgical approaches to the different types of Duane's retraction syndrome, mostly on the affected eye but also on the fellow eye, are described in the literature. METHOD: We retrospectively analyzed the pre- and postoperative findings of 55 patients in whom we performed surgery because of Duane's retraction syndrome during the years 1999 to 2004. The type of retraction syndrome, the angle reduction in primary position and the reduction of head
posture were evaluated in regard to the surgical procedure chosen. RESULTS: In 37 cases surgery was primary. In 25 cases a single recession of the medial rectus (16 cases) or the lateral rectus (9 cases) muscle of the affected eye was performed. For a dose-response relationship of the one-muscle recessions, the mean angle reduction in the primary position was 2 pdpt (cm/m) per mm recession. The mean reduction of head posture was 1.5 degrees per mm recession. In 10 cases combined surgery on the affected eye was performed. The correlation between the mean angle reduction and the recession was 3 pdpt (cm/m) per 1 mm. CONCLUSION: Depending on the type of retraction syndrome, the angle in primary position, the head posture and the globe retraction, different surgical options exist which aim at rehabilitation of the patient suffering from Duane's retraction syndrome.

Source: MEDLINE

**Association of Duane retraction syndrome and Brown syndrome.**

**Author(s):** Bagheri A, Repka MX

**Citation:** Journal of Pediatric Ophthalmology & Strabismus, July 2005, vol./is. 42/4(235-7), 0191-3913;0191-3913 (2005 Jul-Aug)

**Publication Date:** July 2005

**Abstract:** Brown syndrome and esotropic Duane syndrome are common forms of noncomitant strabismus. We report the unusual coexistence of these two eye movement abnormalities in a 5-year-old boy. Strabismus surgery for both conditions was required to improve the head posture.

Source: MEDLINE

**Costenbader Lecture. The efficacy of rectus muscle transposition surgery in esotropic Duane syndrome and VI nerve palsy.**

**Author(s):** Rosenbaum AL

**Citation:** Journal of Aapos: American Association for Pediatric Ophthalmology & Strabismus, October 2004, vol./is. 8/5(409-19), 1091-8531;1091-8531 (2004 Oct)

**Publication Date:** October 2004

**Abstract:** BACKGROUND: Partial tendon transposition was first described by Hummelshein in 1907. Full tendon transposition was reported by Schillinger in 1959. Recently, full tendon transposition with posterior augmentation was reported by Foster in 1997. I will review current thinking concerning the anatomy and physiology of rectus muscle transposition and present our current clinical experience with this procedure in Duane syndrome. METHODS: A retrospective review of vertical rectus muscle transposition procedures in patients with VI Nerve palsy was performed comparing the postoperative field of single binocular vision, amount of improved abduction, and change in the primary esotropic angle. In addition, a consecutive series of vertical rectus muscle transposition cases for the treatment of esotropic Duane syndrome is presented, evaluating the improvement and head position, abduction, and reduction of the primary position esotropia. RESULTS: In VI Nerve palsy patients, vertical rectus transposition surgery produces 41 degrees to 71 degrees of binocular visual field with 10 degrees to 21 degrees of binocular field in abduction. In esotropic Duane syndrome the surgical procedure produces 42 degrees to 66 degrees of binocular field and a correction of approximately 15 degrees of face turn. Variability in the efficacy of the procedure is related to the degree of ipsilateral medial rectus contracture. CONCLUSION: Vertical rectus transposition with posterior fixation can create a binocular diplopia-free field of 40 to 70 degrees in patients with VI Nerve palsy and about 40 to 65 degrees in patients with Duane syndrome. Partial rectus muscle transposition is an effective procedure in cases where surgery on multiple rectus muscles has been or will be required. Orbital wall fixation of the lateral rectus muscle is an effective and reversible method to inactivate a lateral rectus muscle and may be useful in cases of Duane syndrome with marked anomalous innervation and severe cocontraction.

Source: MEDLINE
**Improvement of horizontal excursion and abduction by vertical muscle transposition in patients with Duane’s retraction syndrome type I.**

**Author(s):** Sterk CC, van Hulst-Ginjaar SP, Swart-van den Berg M

**Citation:** Journal of Pediatric Ophthalmology & Strabismus, July 2004, vol./is. 41/4(204-8; quiz 230-1), 0191-3913;0191-3913 (2004 Jul-Aug)

**Publication Date:** July 2004

**Abstract:** PURPOSE: To measure the change in horizontal excursion and improvement of abduction in Duane's retraction syndrome type I after transposition of both vertical rectus muscles and recession of the medial rectus muscle in the affected eye. PATIENTS AND METHODS: This was a retrospective study of patients undergoing surgery for Duane's retraction syndrome type I. Thirty-six patients were treated by transposition of both vertical rectus muscles in combination with medial rectus recession of the affected eye. Head posture, binocular vision, abduction and adduction of the affected eye, and angle of strabismus were measured before and after surgery. RESULTS: After surgery, abduction improved by 15.9 degrees +/- 8.1 degrees (mean +/- standard deviation) and adduction decreased by 5.9 degrees +/- 7.2 degrees. Horizontal excursion improved from 43.1 degrees +/- 8.8 degrees to 53.1 degrees +/- 11.8 degrees. One patient had signs of anterior segment ischemia (ie, enlarged, fixed oval pupil and cells in the anterior chamber), which disappeared after local steroid eye drops were administered. CONCLUSIONS: Surgery enlarges the range of horizontal excursion of the affected eye and causes only a limited decrease in adduction. One patient developed transient anterior segment ischemia. Vertical muscle transposition combined with medial rectus recession is an effective procedure to improve horizontal excursion and abduction in patients with Duane's retraction syndrome type I.

**Source:** MEDLINE

**A simplified approach to the treatment of Duane’s syndrome.**

**Author(s):** Barbe ME, Scott WE, Kutschke PJ

**Citation:** British Journal of Ophthalmology, January 2004, vol./is. 88/1(131-8), 0007-1161;0007-1161 (2004 Jan)

**Publication Date:** January 2004

**Abstract:** INTRODUCTION: To report the results of a large series of patients undergoing treatment for Duane’s syndrome. METHODS: Patients with Duane’s syndrome undergoing strabismus surgery of a horizontal muscle recession procedure, medial rectus recession for an esodeviation or lateral rectus recession for an exodeviation, in order to correct an abnormal head position (AHP) and a significant tropia in primary position were identified. Amount of recession varied with the angle of deviation in forced primary position, versions and ductions, and intraoperative forced ductions. Elimination of AHP was used as a criterion for success. RESULTS: Fifty nine patients were treated with either unilateral or bilateral medial or lateral rectus recession. Mean follow up was 3.1 years. Ninety three percent achieved a postoperative alignment of < or =15 degrees AHP, 66% achieved < or =5 degrees AHP. Only three patients, two from the unilateral Type II group and one from the bilateral combined Types I and II group, went on to have a second procedure for a noticeable residual AHP. CONCLUSIONS: Success (good to excellent results) of horizontal muscle recession was achieved in 93% of patients. Unilateral or bilateral horizontal rectus muscle recession offers a simple and effective surgical option for eliminating AHP and is our treatment of choice in patients with Duane’s syndrome.

**Source:** MEDLINE

**Available in fulltext at [Highwire Press](#)**

Available in fulltext at [Highwire Press](#)
Poor results after recession of both medial rectus muscles in unilateral small-angle Duane's syndrome, type I.

Author(s): Greenberg MF, Pollard ZF

Citation: Journal of Aapos: American Association for Pediatric Ophthalmology & Strabismus, April 2003, vol./is. 7/2(142-5), 1091-8531;1091-8531 (2003 Apr)

Publication Date: April 2003

Abstract: PURPOSE: To eliminate an abnormal face turn in unilateral Duane's syndrome, type I, the medial rectus muscle of the Duane's eye is commonly recessed. Additional recession of the normal contralateral medial rectus muscle has been advocated in selected cases, although little has been published regarding this technique. We present poor results in a small consecutive series. METHODS: Four consecutive cases of unilateral Duane's syndrome, type I, with small-angle primary position esotropia are retrospectively reviewed with attention to postoperative face turn. In all cases, the medial rectus muscle of the "normal" eye was recessed as was the medial rectus muscle of the Duane's eye. RESULTS: Two subjects showed little to no improvement in face turn; one subject developed an increased turn; and the last subject developed a consecutive exotropia. CONCLUSIONS: In small-angle Duane's syndrome, type I, recession of the normal medial rectus may decrease the positive effects of recessing the Duane's medial rectus muscle with respect to face turn as well as increase the risk of consecutive exotropia. An alternate theory of normal-eye Duane's surgery is proposed.

Source: MEDLINE

Unilateral recession and resection in Duane syndrome.

Author(s): Morad Y, Kraft SP, Mims JL 3rd

Citation: Journal of Aapos: American Association for Pediatric Ophthalmology & Strabismus, June 2001, vol./is. 5/3(158-63), 1091-8531;1091-8531 (2001 Jun)

Publication Date: June 2001

Abstract: PURPOSE: To assess the efficacy of lateral rectus resection with medial rectus recession in the affected eye of patients with Duane retraction syndrome (DRS) with esotropia and limited abduction, compared with bilateral medial rectus recessions. METHODS: The charts of 9 patients with DRS who underwent a recession-resection procedure and 10 patients with DRS who underwent bilateral medial rectus recessions were reviewed. Ocular ductions (graded from 0 = full duction to -4 = total deficit), severity of retraction, alignment, head position, and binocular single vision field (for study group only) were recorded before and after surgery. RESULTS: Before surgery, the study and control groups did not differ in mean primary position esotropia (16.9 and 18.8 PD, respectively), face turn (16.5 degrees and 15.0 degrees, respectively), average limitation of abduction (-3.9 and -3.7, respectively), or adduction (-0.1 and -0.3, respectively). After surgery, both groups had similar mean face turns (3.9 degrees and 1.0 degrees), esotropia (3.3 PD and 1.0 PD), and abduction limitation in the affected eye (-2.4 and -2.6). However, mean adduction was significantly worse in the control group than in the study group (-1.5 vs -0.6, P = .02). Globe retraction improved in all control subjects. It worsened in 5 study subjects and did not improve in the other 4. In the study group, 1 patient required reoperation for undercorrection and another was overcorrected. CONCLUSION: Seven of 9 patients with DRS, selected on the basis of esotropia, limited abduction, and mild retraction, benefited from a recession-resection procedure. Abduction improved to the same degree as seen after bilateral medial rectus recessions, with less tendency to limit adduction.

Source: MEDLINE
Vertical rectus muscle augmented transposition in Duane syndrome.

Author(s): Velez FG, Foster RS, Rosenbaum AL

Citation: Journal of Aapos: American Association for Pediatric Ophthalmology & Strabismus, April 2001, vol./is. 5/2(105-13), 1091-8531;1091-8531 (2001 Apr)

Publication Date: April 2001

Abstract: INTRODUCTION: Reduction or elimination of face turn and esotropia in the primary position while maintaining the largest possible diplopia-free field are the major surgical goals in Duane syndrome with esotropia. Unsatisfactory postoperative results may occur because of limitation in adduction, poor abduction, or induced vertical deviations. Recent reports have shown enhanced results from rectus muscle transposition techniques when a lateral posterior augmentation fixation is placed. METHODS: Preoperative and postoperative data of 2 groups of subjects who had Duane syndrome with esotropia in primary position and markedly reduced abduction were comparatively analyzed. Group A consisted of subjects who had transposition of both vertical rectus muscles to the lateral rectus muscle with a posterior lateral augmentation suture placed in each transposed muscle. Group B subjects had transposition of both vertical rectus muscles to the lateral rectus muscle without the posterior lateral augmentation suture. RESULTS: A total of 32 subjects in group A and 22 subjects in group B were analyzed. In group A, anomalous head position improved 19.1 degrees +/- 10.3 degrees compared with group B subjects who improved 10.6 degrees +/- 5.8 degrees (P <.05). In group A, esotropia in primary position improved 16.4 +/- 9.2 PD compared with group B subjects who improved 8.5 +/- 6.9 PD (P <.05). CONCLUSIONS: Subjects with Duane syndrome and esotropia in primary position who had undergone augmented transposition of the vertical rectus muscles obtained improved head position and better alignment in primary position and had a reduction in the incidence of reoperation for undercorrection when compared with similar patients who had undergone vertical rectus muscle transposition without posterior lateral augmentation sutures.

Source: MEDLINE

Outcome of surgery in 124 cases of Duane's Retraction Syndrome (DRS) treated by intraoperatively graduated recession of the medial rectus for esotropic DRS, and of the lateral rectus for exotropic DRS.

Author(s): Kubota N, Takahashi H, Hayashi T, Sakaue T, Maruo T

Citation: Binocular Vision & Strabismus Quarterly, 2001, vol./is. 16/1(15-22), 1088-6281;1088-6281 (2001)

Publication Date: 2001

Abstract: PURPOSE: To determine the outcome and effectiveness of simple horizontal muscle recession surgery in Duane's Retraction Syndrome (DRS). CASES & METHODS: A total of 194 cases of DRS were operated on by us during the past 25 years. Surgery was aimed at improving the binocular alignment and eye position at the primary position as well as any abnormal head posture. Sufficient data were available in 124 cases. Recession of the medial rectus muscle was performed on 76 cases with esotropia and of the lateral rectus on 48 cases with exotropia. Recession dosage was determined during surgery based on three factors: size of the preoperative strabismus in primary position; forced ductions/resistance to traction, and the appearance of the rectus muscle at surgery. RESULTS: Both the primary eye position and the abnormal head posture were satisfactorily improved in 119 cases (89%) after surgery with a result rated "excellent" or "good" by a residual deviation of 7 degrees or less and a definitely improved abnormal head posture, for all types of DRS deviations. CONCLUSION: Recession of the appropriate horizontal rectus muscle is a safe and effective primary procedure for both the primary deviation and abnormal head posture in all types of DRS.

Source: MEDLINE

[Stilling-Duane retraction syndrome; surgical options]. [French] Le syndrome de
retraction de Stilling-Duane; options chirurgicales.

Author(s): Bernasconi OR, Klainguti G, Presset C

Citation: Klinische Monatsblatter fur Augenheilkunde, May 1995, vol./is. 206/5(351-4), 0023-2165;0023-2165 (1995 May)

Publication Date: May 1995

Abstract: BACKGROUND: The Stilling-Duane's retraction syndrome is a congenital abnormality of ocular movements. In order to maintain simple binocular vision, most patients adopt an abnormal head posture; this can be corrected by surgery. MATERIALS AND METHODS: We carried out a retrospective study of the clinical files of 56 patients who presented with Duane's syndrome and had been examined at the Strabological Department of the Lausanne Eye Clinic between 1974 and 1993. RESULTS: Our group study is comparable to that found in the literature as regards the distribution according to sex (45% of males, 55% of females), laterality (75% of the cases with disease predominance in the left eye, 18% in the right eye, and 7% with bilateral, symmetrical disease), and associated anisometropia (18%) or amblyopia (12.5%). Approximately 1 of 5 patients sought medical advice only after 20 years of age. A compensating head turn (towards the ill side in patients with esotropia and towards the healthy side in patients with exotropia) was found in 71% of the cases. Our surgery (10 patients with a mean follow-up of 8 months) resulted in a decreased head turn in 7 cases. CONCLUSIONS: The purpose of this surgery is to improve the head turn without worsening retraction. This can be achieved with simple muscle recessions.

Source: MEDLINE


Author(s): Kaufmann H, Milkowitz K

Citation: Klinische Monatsblatter fur Augenheilkunde, February 1994, vol./is. 204/2(90-7), 0023-2165;0023-2165 (1994 Feb)

Publication Date: February 1994

Abstract: BACKGROUND: The typical signs of the retraction syndrome (Stilling-Turk-Duane) are abnormal head posture, marked limitation of abduction, slight limitation of adduction and convergence, which are always accompanied by retraction of the globe, narrowing of the palpebral fissure, vertical deviation and increased intraocular pressure upon adduction. All signs are explicable by the co-contraction of the horizontal muscles or the failing relaxation of the lateral rectus muscle. Abnormal synergistic innervation occurs when in aplasia of the abducens nerve the lateral rectus muscle receives abnormal innervation by branches of the oculomotor nerve, which may also be accompanied by fibrosis of those parts of the muscle that are not innervated. This pathogenesis gives reason for the variety of signs and reduces the value of all classifications defined by electromyography. It seems more sensible to classify the retraction syndrome with respect to the direction of the head turn. PATIENTS AND METHODS: According to this classification, the left-sided retraction syndrome with head turn in adduction made up the largest, typical group (58%) in our study (n = 82). All other groups represented less than 12%. The main goal of surgical therapy was the elimination of the abnormal head turn, the vertical deviation and the retraction. Based on the pathogenesis, only recessions of one or both horizontal muscles were performed and strengthening procedures were avoided. RESULTS: Concerning the horizontal and vertical deviation and the head posture, the surgical results of this procedure were satisfactory. Preoperatively less than 10% in all groups showed a deviation at distance of 5 degrees and less, whereas 6 month after surgery this small angle was obtained in over 60% in all groups. While preoperatively less than 20% in all groups had a head turn of 10 degrees and under at distance fixation, 6 months after surgery this was demonstrated in over 70% of all our cases. CONCLUSION: The main goal of surgery is the reduction of the abnormal head posture, the retraction with narrowing of the palpebral fissure and the vertical deviation. Only recessions of one or both horizontal muscles can achieve the necessary mechanical relief. In cases with marked
retraction one must avoid strengthening procedures.

**Source:** MEDLINE

**Vertical rectus muscle transposition surgery for Duane's syndrome.**

**Author(s):** Molarte AB, Rosenbaum AL

**Citation:** Journal of Pediatric Ophthalmology & Strabismus, July 1990, vol./is. 27/4(171-7), 0191-3913;0191-3913 (1990 Jul-Aug)

**Publication Date:** July 1990

**Abstract:** Thirteen patients with Duane's syndrome, Type I, underwent full vertical rectus muscle transposition. Prior to surgery, all patients had esotropia in the primary position and 11 patients had a face turn. Postoperatively, esotropia was improved in 77%. The face turn was improved in 100% and eliminated in 69%. Abduction ability was increased and binocular diplopia-free field size enlarged to a mean of 60 degrees. Seven patients (54%) with a mean preoperative deviation of 17 prism dipters required only vertical rectus muscle transposition to improve their face turn and strabismus. Six patients (46%) with a mean preoperative deviation of 30 delta required an additional medial rectus recession several months later. Two patients (15%) developed a vertical deviation following vertical rectus muscle transposition.

**Source:** MEDLINE

**Duane's retraction syndrome.**

**Author(s):** Harmon DE, Primo SA

**Citation:** Journal of the American Optometric Association, May 1990, vol./is. 61/5(378-81), 0003-0244;0003-0244 (1990 May)

**Publication Date:** May 1990

**Abstract:** Duane's retraction syndrome (DRS) is a congenital abnormality of ocular motility that occurs in about 1% of strabismic patients. Three types have been described and the clinical features include incomitant horizontal strabismus, restricted motility and globe retraction. Head turn, upshoot or downshoot of the adducted eye, and bilaterality may occasionally be present. Since strabismus is invariably present in DRS, careful assessment of extraocular motility should be performed on all children with a suspected or confirmed eye turn. Early diagnosis may save practitioners and parents hours of time and financial investment with orthoptic and surgical management attempts. A case of DRS is presented.

**Source:** MEDLINE

**A surgical approach for Duane syndrome.**

**Author(s):** Kraft SP

**Citation:** Journal of Pediatric Ophthalmology & Strabismus, May 1988, vol./is. 25/3(119-30), 0191-3913;0191-3913 (1988 May-Jun)

**Publication Date:** May 1988

**Abstract:** Duane retraction syndrome (DRS) represents a spectrum of motility disorders in which the common feature is retraction of the affected eye on attempted adduction. Electrophysiologic and neuropathologic studies have shown that the underlying cause is anomalous innervation of the lateral rectus with the medial rectus and, at times, with vertical muscles in the affected eye. Clinical abnormalities observed in DRS can include any or all of the following: a deviation in the primary position; abnormal head position; severe retraction causing a pseudoptosis; and upshoots and/or downshoots associated with A, V, or X patterns. A surgical approach based on the analysis of these four features is presented, allowing the surgeon to devise an appropriate, individualized plan for a given case which can yield optimal results in one operation.
Surgical treatment of Duane's syndrome.

Author(s): Pressman SH, Scott WE

Citation: Ophthalmology, January 1986, vol./is. 93/1(29-38), 0161-6420;0161-6420 (1986 Jan)

Abstract: Nineteen patients undergoing treatment for Duane's syndrome are reported. The patients were treated with appropriate horizontal muscle recession in order to relieve abnormal head position or a significant tropia in primary position. Success rate in eliminating the abnormal head position was 79% while 100% were significantly improved. No overcorrections occurred despite large recessions. Retraction in adduction was reduced in each case. Motility of the eye was not increased following recession and in no case was fusion ability or stereopsis affected. The elimination of abnormal head position appears to be stable for periods up to 8.75 years. Postoperatively, patients obtained approximately 30 degrees of binocular visual field including primary position. Other surgical techniques in treating Duane's syndrome are discussed.

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… surgery has been demonstrated to reduce eye deviation in the primary position, thus improving patients' head posture. … lead us to recommend that strabismus surgery be performed in conjunction with ptosis surgery for GFS … Li-Chen Wei, et al The surgical outcome of GFS 160 …

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A simplified approach to the treatment of Duane's syndrome
ME Barbe, WE Scott, PJ Kutschke - British Medical Journal, 2004 - bjo.bmj.com

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by C Bogdanică - 2004
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