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InteRyc-volume 1, January, February and March, 2002

ALL INDIA STRABISMOLOGICAL SOCIETY

JKA Institute of Strabismology and binocular Vision

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Sudha Awasthi Patney, MBBS, MS (Ophth), FRCOphth (London)

(NOTE: The following is a repeat for obvious reasons)

A special request to the members

This is an appeal to all the members to please start a campaign for prevention of amblyopia. Actually I am of the opinion that a legislation is needed badly, that will make it compulsory that every child's eyes are thoroughly examined by the age of 1 year, so that measures can be taken to prevent amblyopia (strabismic, anisometropic and ametropic) and strabismus. If it could be done for vaccination, it can be done for eye examination also.

At present there is general indifference towards this subject. It is also obvious that pediatricians and ophthalmologists have to be trained not to advise delay in treatment because the patient is a young child / infant. It is tragic that although parents have now become aware of the need for early treatment, the pediatricians only rarely refer them to ophthalmologists who are advising them to wait until the child is 8-10 / old enough for examination. We have to advise them strongly against this practice. If we can not compel the Government to bring in legislation, we can at least alert the public, the pediatric physicians and the ophthalmologists.

It is obvious that many more Institutes of strabismology are needed in various parts of the country. Would you, dear members, be willing to take on the task of starting a branch of this JKA Institute in your area? *Any help and advice that I am capable of providing will be forthcoming. You will need some basic instruments to start with. Orthoptic instruments are the cheapest of the lot, have you noticed*? *Please let me know at once if you are interested.*

Please try to alert the patients, parents and other relatives, the public and other physicians, particularly ophthalmologists and pediatricians about the dangers of amblyopia, strabismus and other complications if significant refractive errors are not corrected within the first years of life and if strabismus is not treated immediately.

It is very painful to see so many cases of amblyopia. This condition, as you know, is totally preventable if treated early, whatever the age of the patient, the younger the better. The best time is immediately after the start of strabismus. However, it is obvious that to prevent ametropic and anisometropic amblyopia and in many cases strabismus, the children have to be thoroughly checked at least once by the age of 1 year. The saying that prevention is better than cure is *truest* in the case of strabismus and amblyopia.

REMOVE YOUR COBWEBS (Ryc)

(The section on information)

1. About the Institute
2. About the Society
3. About the courses
4. About the workshop
5. About InteRyc, the News-Letter-Update of the society
6. About the Indian Orthoptic Journal to be restarted soon.

1. *About the Institute*

A) *The need to have a squint treatment center* and a training center for strabismologists and orthoptists in India could not be ignored anymore in *nineteen fifties*. Dr. H.L.Patney felt it most acutely as he had

trained as a premedical student, medical Graduate and postgraduate in ophthalmology in UK. He had been doing orthoptics, contact lenses and all types of surgery as a Registrar in the Ophthalmology department of the Royal Cardiff Infirmary in Cardiff, Wales, UK back in 1942-44. He had the good fortune of being the assistant of Sir Tudor Thomas and used to assist him in his private practice also. Sir Tudor Thomas was a living legend in those days and was a pioneer in keratoplasty. However, he did all types of operations including retinal detachment repair and plastic surgery. Young Dr. Patney was given lots of opportunity to operate even on Sir Thomas' private patients. Sir Thomas was a very famous and busy man and he must have had confidence in Dr. Patney's prowess in surgery as he gave him even major surgeries to do. Sir Thomas' words and signatures on Dr. Patney's old books testify to this.
In 1946 when Dr. H.L. Patney was asked by Dr. Mehrey, the founder of Sitapur Eye Hospital to make a plan for the expansion of the hospital, he did a thorough job. He included in the plan, the name of *a squint / orthoptic department and school* along with those of ocular pathology, instrument factory, blind school, optometry school, postgraduate institute of ophthalmology, trainee's hostels, staff's residences etc. Much later he used to say that everything in that plan materialized except a boundary wall.
Dr. Mehrey who was himself keen on keeping everything upto date in his hospital happily worked hard to realize their dreams. It took them a few years to get a first rate orthoptic department and school.
1) The beginning was with *an orthoptic department* in early fifties by Dr. Patney who taught a smart compounder in the hospital the basic techniques of orthoptic examination and exercises on synoptophore.
2) *The Orthoptic School* was started in 1960 and according to plan Dr. Sudha Awasthi (who was at that time in K.G. Medical College, Lucknow) was asked to join the hospital by Dr. M.K.Mehra, (Dr. Mehrey's son). Dr. Awasthi had just passed her MS (Ophth.) from King George's Medical College, Lucknow, and was known to be specially interested in the subject. She joined Sitapur Eye Hospital and was soon after sent to London in October 1960.
3) A first rate orthoptic department, the first in India, which was on the lines of that at Moorfields Eye Hospital (High Holborn branch where Mr. T. Keith Lyle was the Director), was established after she returned from London after 1 year's training under Mr. Lyle.

B. *The need for imparting training in the subject of strabismology* (including orthoptics), was repeatedly impressed upon Dr. Sudha Awasthi (now Patney) by another living legend of those days, Mr. T. Keith Lyle. He was in 1960 and later for many years, the Dean of Institute of Ophthalmology, London and Director and Surgeon-In-Charge of the famous Orthoptic Department of the Moorfields Eye Hospital (High Holborn branch), London. Dr. Sudha Awasthi was training under him to further her somewhat limited knowledge of the subject, already gained during the running of an orthoptic clinic by her from 1957 to 1959 under the guidance of Prof. M.K.Mehra, a double FRCS.

Mr. Keith Lyle insisted that she should also train like an orthoptist-trainee in their Orthoptic School to gain first hand practical knowledge so that she can train orthoptists and Ophthalmologists / strabismologists with confidence. She stayed at Moorfields Eye hospital for 1 year and was then sent to Germany and Switzerland to learn first hand, pleoptics from the two pioneers (Prof. Cuppers of Giessen, W. Germany and Prof. Bangerter of St. Gallen, Switzerland, respectively). On her return to India in 1961, the ground was ready for her to impart to the ophthalmologists and the orthoptic trainees, special training in strabismology and orthoptics. The *first Squint / Orthoptic department and Orthoptic School of India had already been started at Eye Hospital, Sitapur, which was the premier eye institution of India in fifties, sixties and seventies* (for some more information see the inside of the back page). During her days there she kept on running the squint department, training the orthoptists, DOMS candidates (as Associate Professor in the Nehru Postgraduate Institute of Ophthalmology) and visiting ophthalmologists wishing to learn the subject.

C. *The idea of starting a training institute for strabismology* was conceived soon after Dr. H.L. and Dr. Sudha Awasthi-Patney left Sitapur and came to Rajkot.
The center for squint treatment was being run since their arrival in Rajkot in 1972 but formal inauguration was performed in 1983. However, due to Dr. H.L. Patney's serious and prolonged illness the plan had to be kept suspended. The Institute started functioning in real earnest since 1996 but the foundation was being strengthened by Dr. Sudha Awasthi-Patney since 1994. She took a 4.5 months study tour of USA and UK in 1994, followed by annual visits to update her knowledge in preparation for starting and running the Institute and reviving the AISS. New orthoptic instruments were bought and old ones serviced.

D. In 1996 the Institute became functional along with the newly revived AISS.
E. At present there are only 29 members in good standing, i.e., the members who have paid up their dues until last year (2001). In all there were 88 registered members. Invitation to join the society has never been repeated / sent out again after 1997.
F. The Institute is running a fellowship course by correspondence. A diploma course is soon to be started for people who find the fellowship course too hard.
G. Other activities are the various annual contests, the winners getting trophies and cups and a total of Rs.4350 in cash prizes every year.
H. There is a fellowship (Rs.1000/pm) for members 35 years old or younger during their stay at Rajkot for practical experience. So far nobody has applied for it.

2. *About the Society*

(1) All India Strabismological Society (AISS) was *conceived and started* by Dr. H.L. Patney and Dr. Sudha Awasthi in 1967. The idea came to them during their participation in the founding session of the International Strabismological Association (ISA), which was held in 1966 at Giessen, W. Germany. Prof. Cuppers, one of the pioneers of pleoptics was the head of Ophthalmology at the Universitats Augenklinik (University Eye Clinic) there. Mr. Keith Lyle was the founding president and Dr. G.K. von Noorden, the founding secretary. Dr. Sudha Awasthi was one of the panelists and speaker at the ISA meeting.
One of the 4 aims of ISA is to spread the knowledge of the subject of strabismology. The other three are given on the inside of the front cover.
(2) The founding meeting of the society was held in Calcutta in 1967 during the AIOS conference. Neither Dr. Patney nor Dr. Awasthi wished to be the President. They asked Dr. L.P.Agarwal to be the first president and he accepted. Dr. Awasthi was the founding secretary and Dr. Patney the treasurer. Many senior and well-known ophthalmologists joined the society.
(3) The first regular meeting was held at Ahmedabad during the AIOS congress in 1968. At the executive committee meeting, a proposal to have the *society registered* was passed. This was done same year..
(4) The first activity of the new society was to hold a 7-days refresher course (workshop) on squint and other ocular motility disorders in September 1967 at Sitapur. It turned out to be very successful, probably because it was the first of its kind in India. Members who were mostly senior ophthalmologists attended it; some of them were fairly well known.
(5) Every year new elections were held and the management of the society changed hands. Somewhere around 1976 the society became defunct.
Note: Frankly speaking this is a drawback in the democratic system that a lovingly conceived and nurtured institution / organization may die a premature death if it falls into indifferent hands.
(6) *Revival of the society* was proposed during a meeting (of old members and some other ophthalmologists), that was hastily arranged at the request of Dr. Sudha Awasthi-Patney in 1981 just after the conclusion of Dr. Nagpal's very successful National Symposium on squint. It was decided to revive the society during the next conference of AIOS and Dr. Sudha Awasthi-Patney was asked to be the convener and do it. New and old members gave their names to be enrolled again.
Dr. Awasthi-Patney unfortunately failed to attend the next AIOS conference in 1982 due to the sudden serious illness of Dr, Patney. She requested Dr. B.T. Maskati, the Hon. Gen. Secretary of AIOS to make an announcement that Dr. Awasthi-Patney can not come now but she will be sending circulars for a meeting of the society to be held later at Rajkot. She never knew what happened but Dr. Prem Prakash started a new society. It is no use going into the details now.
(7) At last the AISS was revived in 1996. At present there are 88 members but out of them only 29 *are members in good standing (having paid at least upto year 2000)*. Only 11 members have paid for 2001.

3. *About the courses*

(a) *Fellowship*: Theory part is now to be sent in 15 installment of 50-100 pages each as the X installment having 5 parts was extended to 334 pages. The number of installments was raised from 11. Apart from the theory part, some practical experience has to be gained at the Orthoptic / Ocular Motility Clinic, Rajkot. The period of the practical experience has to be determined by the fellows themselves but a minimum of 1 month is preferable.
(b) *Diploma* (to be started soon): Detailed information on request.

(c) *Certificate of* Proficiency: If the ophthalmologists / strabismologists wish to get some practical experience only, as many of them did when I was at Sitapur Eye hospital, they are welcome. They will be given a testimonial (Certificate of Proficiency) for the period of their stay here.

4. About the workshops / Refresher Courses

The idea of holding strabismus / amblyopia workshops is very much alive. Members shall be notified about the time and place. The course will be of a week's duration.

5. About InteRyc, the News-Letter-Update of the society:

(A) At present it is being published every three months. Previously it was coming out every two months. If we revive the Indian Orthoptic Journal that had been started by Dr. Sudha-Awasthi Patney and Dr. J.M. Pahwa in 1963 at Sitapur, the InteRyc may have to be discontinued. We have an alternative plan also. Please read the item 6 below.

(B) It is sent free to every member of the AISS and JKAI but the subscription for membership must be sent every year. *Only 11 members have sent the 2001 subscription (that should have been sent on January 1, 2001.*

(C) If the subscription for 2001 is not received by May 29, 2002, I am sorry to say that it will not be possible to send the InteRyc until the subscription is received. I wish I had enough money to keep on spending from my pocket.

*6. About the **proposed revival** of the Indian Orthoptic Journal*: Action on this proposal is being delayed because I had asked for members' views about the replacement of the InteRyc by the Indian Orthoptic Journal. So far no response has been received. Your views are important because the InteRyc is a quarterly publication and the Journal will be published once a year. Secondly, the matter in a journal is useful in a different way than that in a news letter-update. I would like to know which one do you think you would find more useful.

There is an **alternative plan** *also, that the publication of InteRyc be continued and the journal may be started as an addition. However, someone else must come forward. There must be an editorial board, an executive editor and a managing editor. If anyone of you is interested*
I would very much like to know about your preference before going on with the proposal.

ATTENTION

1. This is a repeat request to members to let us know if they *have not received any one or more volumes of the InteRyc*, the next installment of the course material or *a receipt of the money they have sent*. There is always a chance that things may go missing while in transit.

2. The *CME (member of the year 2002) quiz-No.*1 is included in this volume. Please answer it, cut along the dotted line and send it back by mail. The answers to the previous CME quiz are now being sent to the members along with the new quiz.
The questions in each quiz are drawn from the material given in that particular issue of the InteRyc under the headings of Strabismus Summary Series, Update, InformIT and Short Review article on Strabismus etc.

3. The *update questionnaire* is printed on the back of the CME quiz. Please answer it if there is any change or addition in the information about phone No., FAX number, mobile phone number, pager number, E-mail address or a web-site address.

4. *Background of the Indian Orthoptic journal*: Dr. Sudha Awasthi (Patney) was inspired greatly by her teacher Mr. T. Keith Lyle (read about him under the heading of “In fond memory” on the inside of back

cover). He stressed the need of making the subject of strabismus popular among ophthalmologists and campaigning for early diagnosis in infants and children to prevent amblyopia. After coming back to Sitapur Eye Hospital in 1961, she conceived the idea of bringing out an Indian Journal of Orthoptics on the lines of the British Orthoptic Journal. Dr. J.M. Pahwa (who liked the idea and agreed to look after the practical aspect) and Dr. Awasthi (Patney) started the journal in 1963 and looked after it as the editor and the joint editor respectively until her departure from Sitapur in 1972. Dr. Pahwa continued publishing it until a few years back. About 2 and one 1/2 years back he asked Dr. Sudha A. Patney if she would like to restart publishing the journal to which she replied in the affirmative. Late Dr. Pahwa then sent some old papers relating to the society sometime back.
The journal would probably replace the InteRyc, as it will be difficult to publish both unless there is a managing editor assisted by an editorial board.

5. The fees for the whole of theory part of *fellowship course* are now Rs.1500 *including the mailing charges*. The mode of mailing each installment is either by registered A.D. post or by couriers, mostly by the latter as it is faster. However, couriers do not go to all the places. Moreover, an installment sent by the courier did not reach a fellow and I sent another one by registered A.D. post. Now therefore, we shall have to send them by post despite more expense involved.

6. *The usual procedure of sending the installments*: Installments are sent one by one accompanied by the relevant question paper. The fellow has to answer the questions and send the answer sheet back, on receipt of which the next installment of the course is sent. Previously the fees had to be sent for one installment at a time. This has been changed to save the fellow's time, effort and postal expenses. It is now payable in one lump sum, in advance in the form of a demand draft for Rs1500, in the name of Dr. S.A.Patney, S/B account No.4256 at UCO bank. As explained in earlier InteRycs this is a no profit-some loss venture.

7. The membership subscription for year 2002 became due on 1st January 2002. Members, who do not pay the subscription for the year 2001 by the end of June 2002 (extended date) will not be sent future InteRycs. This is because of financial constraints. Despite subsidizing the expenses we are finding it hard to keep afloat. The members, therefore, *are requested to send it soon* (please see the Update questionnaire on the back of the Member of the Year 2002 Quiz 1). *Now the book-post charges have become Rs.7 (another steep rise from Rs.3 only a couple of years ago).*

8. *The list of members who have paid at least upto 2001, is given below in the table below:*

Sr. No.	JIM No.	Name of the member	Paid for year	Sr. No.	JIM No.	Name of the member	Paid for year
1	1	Dr. AKS Rathore	2001	7	43	Dr. Meenakshi Bajpai	2002
2	3	Dr. R.M. Sahai	"	8	45	Dr. Dolly Tandon	2001
3	19	Dr. Venogopal G.	2002	9	77	Dr. Beant Singh	2001
4	29	Dr. B.P. Kashyap	2001	10	79	Dr. Ashok K. Chakrabarti	2001
5	36	Dr. T.K. Sharma	2002	11	82	Dr. Tejas Mehta	2001
6	39	Dr. A.K. Pal	2001	12	83	Dr. U. Mukhopadhyaya	2001
				13	84	Dr. Nandish Shah	2002

IMPORTANT NOTE:

1. *All the members whose names are not given in this list (see table above), are requested to send two years subscription (for 01 and 02). It can be in the form of a demand draft for Rs.200 OR cheque for Rs.236, in the name of Dr. S.A.Patney, UCO bank S/B account No. 4256, Rajkot.*
2. *Members who have paid for 2001 but not for 2002, are requested to send one year subscription only, DD for Rs.100 / cheque for Rs.118 only.*

3. *InteRyc volume 2, 2002 will not be sent to members whose 2001 subscription will not be received by May 29, 2002*.

Welcome: We welcome a new colleague, Dr. Nandish Shah to our family. I hope he will be able to find what he was looking for when he joined our fold.

NEWS

We repeat the announcement of 2001 contests: *Entries are invited for the following contests*:

1) *Teleconference*: Papers are invited on any subject concerning strabismus, amblyopia, nystagmus or other disorders of ocular motility and binocular vision. The best paper will be awarded Dr. H.L.Patney Memorial Trophy, Rs.2500 in cash and a testimonial to the effect.
2) *Eye-Rhyme*: Entries are invited for short poems in English / Urdu / Hindi. The subject for the poem is "eyes". Any type of poetry in which the word is mentioned will qualify for the contest. The best poem will get a prize of Rs.250 in cash, a cup and a testimonial.
3) *Cartoon*-Eye: Please send your cartoon for the Cartoon-Eye contest latest by 31st July 2002. Any subject concerning the eyes is acceptable. The best cartoon will get cash prize of Rs.250, a cup and a testimonial.
4) *Remembering series quiz*: What is the name of the strabismologist who invented a muscle transplant procedure (named after him) for horizontal muscle palsy?

Note:
(1) *The member of the year will be chosen on the basis of the over all performance (taking part in discussions, replying to queries, making suggestions, taking part in contests etc) not only by the results of the quarterly CME quiz).*
(2) The entries should reach us latest by 31st July 2002. The amounts of cash prize in items 1 and 2 have been reduced due to poor quality of entries. Please do your best.

COMING UP

1. April 21-26, 2002: 29th International Congress of Ophthalmology, Sydney, Australia. *Contact*: Congress Secretariat, ICMS Australasia Pty Ltd., GPO Box 2609, Sydney, NSW, Australia. Ph.: +61 (2)-9241-1478; FAX: +61 (2)-9251-3552; email: opthal@icmsaust.com.au.

2. April 21-26, 2002: 13th Symposium of International Society on Metabolic Eye Disease, Istanbul, Turkey. Contact: Heskel M. Haddad, M.D., 1125 Park Avenue, New York, NY 10128, USA; Ph.: +1 (212)-427-1246; FAX: +1 (212)-360-7009.

3. May 5-10, 2002: The Association for Research in Vision and Ophthalmology (ARVO) Annual Meeting, Ft. Lauderdale, FL, USA. Contact: ARVO, 9650 Rockville Pike, Bethesda, MD 20814-3998, USA. Ph.: +1 (301)-571-1844; FAX: +1 (301)-571-8311.

4. May 17-18, 2002: The Seventh Annual Rome Symposium on Cataract. Glaucoma and Refractive Surgery, Rome. Contact: Registration Manager, Ph: +1 (856)-848-1000; e-mail: meetingregistration@slackinc.com; Web site: OSNSuperSite.com/Rome.

5. May 19-20, 2002: 11th Meeting of the European Association for the Study of Diabetic Eye Complications (EASDEC), Paris, France. Contact: COLLOQUIUM, 12 Rue de la Croix Faubin, 75 557 paris Cedex 11; Ph: +33 (1)-44-64-15-15; FAX: +33 (1)-44-64-15-10; e-mail: smundler@colloquium.fr.

6. May 20, 2002: United Kingdom and Ireland Society of Cataract and Refractive Surgeons Satellite Meeting - Refractive Surgery for the Cataract Surgeon. Contact: UKISCR Secretariat, c/o ENTER, North Riding Infirmary, Newport Road, Middelsbrough TS1 5JE, UK; Ph: +44 (1642)- 854054; FAX: +44 (1642) - 231154, e-mail: ukirscr@onyxnet.co.uk.

7. May 24, 2002: Symposium on Surgical Strategies for Success, Singapore. Contact: Registration Manager, Ph: +1 (856)-848-1000; e-mail: meetingregistration@slackinc.com; Web site: OSNSuperSite.com/S3Asia.

8. May 25-27, 2002: VI International Course of Ophthalmology, Cali, Colombia. Contact: Dr. Piedad Gonzalez P. email: Clinicaoftdm@andinet.com

9. May 30-June 2, 2002: VI Congress of the Mediterranean Society of Ophthalmology, Alicante, Spain. Contact: Jorge L. Alio. Ph.: +34 (902)-33-33-44; FAX: +34 (96)-526-05-30; email: oftalio@ibm.net.

10. June 3-7, 2002: XIII Congress of the European Society of Ophthalmology, Istanbul, Turkey. Contact: Omar's Destination Services, ODS Travel and Tourism Ltd, Yildiz Cicegi Sok, 2/1, 80630 Etiler, Istanbul. Ph: +90 (212)-263-64-07; FAX: +90 (212)-263-67-59; e-mail: ods@soe2001.com

11. June 9-11, 2002: The 27th Indonesian Ophthalmolosts' association (IOA) Annual Meeting, Jakarta, Indonesia. Contact: Dr. Bondan Harmani, Department of Ophthalmology, University of Indonesia, JI. Salemba Raya No. 6, Jakarta 10430, Indonesia. Ph.: +62 (21)-334-878; FAX: +62 (21)-392-7516; email: perdami@indo.net.id.

12. June 15, 2002: 2nd Edition of RSU Refractive Surgery Updates, Venice, Italy. Contact: Instituto Laser Microchirurgia Oculare, RSU Refractive Surgery Updates, Crystal Palace, Via Cefalonia, 70, 25124, Breschia, Italy. Ph: +39 (030)-2428343; FAX: +39 (030)-2428248; e-mail: scaffidi@ilmo.it.

13. June 23, 2002: Symposium on Surgical Strategies for Success, Mumbai, India. Contact: Registration Manager, Ph: +1 (856)-848-1000; e-mail: meetingregistration@slackinc.com; Web site: OSNSuperSite.com/S3Asia.

14. June 30, 2002: Hamburg Glaucoma Meeting, Hamburg, Germany. Contact: Universitatsklinikum, Hamburg - Eppendorf, Klinik und Polyklinik fur Augenheilkunde Martinistr. 52, 220246 Hamburg. Ph: +49 (40)-428-03-3113; FAX: +49 (40)-428-03-2338; e-mail: augenklinik@uke.uni-hamburg.de.

15. July 21-25, 2002: 7th International Conference on Low Vision, Goteborg, Sweden. Contact: Conference Secretariat, Congrex Goteborg AB, Att: Vision 2002, Box 5078, 402 22 Goteborg, Sweden. Ph.: +46 (31)-81-82-00; FAX: +46 (31)-81-82-25; email: vision2002@gbg.congrex.se; Web-site: www.congrex.com/vision2002.

16. July 22-25, 2002: *XXIII Pan-American Congress of Ophthalmology, Buenos Aires, Argentina. Contact: Pan-American Association of Ophthalmology PAAO* Administrative Office, 1301 South Bowen Rd., Ste. 365, Arlington, TX 76013-2286, USA. Ph.: +1 (817)-265-2831; FAX: +1 (817)-275-3961; email: paao@paao.org.; Web-site: www.paao.org.

17. October 20-23, 2002: *Annual American Academy of Ophthalmology Meeting, Orlando, USA. Contact:* Ph.: +1 (415)-561-8500 extension 304; FAX: +1 (415)-561-8576.

STRABISMUS SUMMARY SERIES PART XVI

In this XVI part of Strabismus Summary Series the topic of "Getting familiar with orthoptic instruments is being taken up. In most of the European and British squint departments / ocular motility clinics / strabismologists' offices, practice of orthoptics is still alive, though reduced compared to earlier decades. However, in USA, the country that probably has the maximum number of strabismologists, the conservative treatment is not very popular. The non-surgical treatment mainly consists of occlusion to treat amblyopia. In most ocular motility clinics even synoptophore is not there. Generally the whole list of instruments present consists of vision testing equipment, an occluder, Worth Four Dots, prisms bars (vertical and horizontal) and Titmus / Random Dot stereotest. More specialized ocular motility clinics, like the one at the world famous Massachusetts Eye and Ear Infirmary, has instruments like major amblyoscope, Bagolini lenses etc. in addition to those mentioned above.

Getting familiar with orthoptic instruments: Part 2

This series will not only deal with instruments for use in orthoptic / ocular motility clinics / strabismologists' offices but also in those ophthalmologists' offices who are even slightly interested in diagnosing strabismus and other ocular motility disorders. We shall now take up the instruments one by one to give a brief description of each of them (please refer to the list of instruments that was given in InteRyc volume 4, 2001 on page 9). In the following text we shall describe in short the first few instruments named in the list.

1. *Vision testing equipment / charts / projection devices*

   All ophthalmologists are quite familiar with the vision testing devices. They can be grouped in three types:

   (a) *Those for adults and older children*: Examples: Snellen's charts (for near and distance) and Logmar charts. It is important to test the distance VA as well as the near VA.

   (b) *Those for preschool children and illiterates*:

   A. Various types of optotypes (vision testing characters, letters / others): Examples: C charts (Landolt's broken ring test), E (The Illiterate E test, linear and isolated E optotypes), numbers, English alphabets (Snellen's test types) and pictures (The Beale-Collin's picture test types), Kay pictures, Sjogren's isolated hands charts, Allen's cards, HOVT chart etc. Allen's cards have become quite popular in the west. They have drawings of objects that are familiar to western children. In India children can be trained to recognize the pictures before carrying out the test.

   B. Other devices: Examples:

   (1) *Hundreds and thousands sweets*: It can be used as a qualitative test in preverbal children between the ages of 15-20 months. The test is done at if the child tries to pick up a sweet, the VA is at least 6/24 at 1/3rd of a meter.

   (2) *Stycar Rolling Balls*: The test is done at 3 meters. The size of the balls ranges from 3.5 mm to 6 cm. The minimum age limit is 6 months.

(3) *Catford drum*: It has dots of various sizes corresponding to Snellen optotypes. The visual acuity tested with it ranges from 2/60 to 6/6.

(4) *Sheridan Gardiner test*: It is a single optotype test. The child looks at one letter at a time. It tests VA ranging between 6/60 to 6/3. The lower age limit is an intelligent 2 and one 1/2 years old.

(5) *Sonksen Silver test*: The basis of this test is the "crowding phenomenon". It tests linear VA in which the child looks at several letters at a time. In cases of amblyopia the angular VA (with single optotype testing as in Sheridan Gardiner test) is better that the linear VA as in various charts. This is because of the crowding phenomenon found in cases of amblyopia.

(6) *Kay pictures*: Children look at the various pictures and name the object.

(c) *Those for infants*:

1. Fixation preference test
2. Grating acuity test
3. Optokinetic nystagmus (OKN) test
4. Visual Evoked Potentials (VEP)

NOTE: *Please refer to InteRyc volumes 3 and 4, 1999, pp. 9-13 and 8-11 respectively for details of these tests and equipment used for them*. The material is also available on our web-site (www.Geocities.com/sapatney/) under the heading of Strabismus Summary Series.

(To be continued in volume 2, 2002)

UPDATE

Note: Update contains abstracts/short outline of the articles that are of clinical interest and that have been recently published in the medical/ophthalmic literature.

Update-General Medicine

Challenging the Mind May Save It From Alzheimer's (Dr. R. S. Wilson et al: Journal of the American Medical Association 2002;287:742-748): The authors carried out a study of more than 800 Catholic nuns, priests and brothers 65 and older who are participating in the ongoing US-based Religious Orders Study. They found that people who participated most often in mentally challenging activities had a 47% lower risk of Alzheimer's disease. Those who participated a moderate amount had a 28% lower risk of the ailment compared with those who rarely participated. The researchers looked at 7 common activities, including watching television; listening to the radio; reading newspapers, magazines and books; playing games, such as cards, checkers or crosswords or other puzzles; and going to museums.

Update-General ophthalmology

Amblyopia in congenital ptosis (Hornblass A, Kass LG, Ziffer, AJ, Ophthalmic Surg 1995 Jul-Aug;26(4):334-7): This study evaluates the association between congenital ptosis and amblyopia. Amblyopia was detected in 7 of 36 (19%) patients with congenital ptosis. Two patients (6%) with amblyopia had no contributing factors other than the presence of congenital ptosis. A statistically significant correlation between severe non-occlusive ptosis (greater than or equal to 4 mm) and the development of amblyopia was identified. No new cases of amblyopia developed after surgical repair of the ptosis, suggesting early surgery for severe non-occlusive congenital ptosis may decrease the incidence of amblyopia.

Update-Strabismology

1. *Spontaneous intracranial hypotension with unique strabismus due to third and fourth cranial neuropathies (Brady-McCreery KM, Speidel S, Hussein MA, Coats DK: Binocul Vis Strabismus Q 2002 Spring; 17(1): 43-8)*: The authors report an atypical case of Spontaneous Intracranial Hypotension (SIH) with bilateral trochlear nerve palsies and an oculomotor nerve palsy. A 42 year old man treated for SIH, had relief of his neurological symptoms following Neurosurgery. But diplopia due to bilateral trochlear nerve palsies and a partial oculomotor nerve palsy believed to be due to brain-stem ischemia, persisted. They were treated successfully with eye muscle surgery. Conclusion: SIH is a rare disease that has been associated with a variety of symptoms and signs including cranial neuropathies. A diagnosis of SIH should be considered in a patient complaining of headache, diplopia and typical radiological features. According to authors this is the first reported case in which bilateral trochlear nerve paresis has been reported in association with this condition.

2. *Diagnosis and management of the surgical complication of postoperative "Slipped" medial rectus muscle: a new "Tendon Step Test" and outcome/results in 11 cases (Raz J, Bernheim J, Pras E, Saar C, Assia EI.: Binocul Vis Strabismus Q 2002 Spring;17(1):25-34)*: The authors report their experience in eleven patient with a "slipped" medical rectus after prior surgery. They describe the "tendon step test" as the basis for early intraoperative suspicion of a "slipped" muscle. The diagnostic translucent empty capsule is usually identified following careful dissection of the fibrous tissue surrounding the capsule. They analyzed the patients' medical records. Preoperatively, adduction were normal in one case, mild to moderately limited in eight and severely limited in two. Proptosis and widening of palpebral fissure were inconstant features. They performed the tendon step tests intraoperatively and exposed the empty capsule to confirm the diagnosis. Then they excised the empty capsule attached to the intended scleral insertion, advanced and reattached the retracted "slipped" muscle within its capsule to the sclera. In addition, the ipsilateral lateral rectus was recessed in 4 cases. Results were satisfactory in 8 of the 11 cases.

3. *A surgical alternative for dissociated vertical deviation based on new pathologic concepts: weakening all four oblique eye muscles. Outcome and results in 9 cases (Gamio S.: Binocul Vis Strabismus Q 2002 Spring;17(1):15-24): The authors selected* nine patients prospectively. They carried out simultaneous and symmetrical weakening of all 4

oblique eye muscles in order to reduce bilateral cyclotorsion. For analysis, "Statistical Significance" level used was $p<0.05$. *Results*: The mean preoperative hypertropia was 17.9 prism diopters (pd) for the right eyes (RE) and 17.7 pd for the left eyes (LE). Mean post-surgical deviation achieved was 6.44 pd for the REs and 5.78 pd for the LEs. Statistical analysis (Wilcoxon's Test) showed a $p<0.02$ for both eyes. In all cases, a symmetrical correction was obtained. *Conclusion*: The hypothesis that the manifest hypertropia seen in patients with DVD is secondary to cyclotorsion, mediated primarily by the oblique muscles, was validated by improving (reducing) the DVD by performing bilateral and symmetrical weakening of all four oblique extraocular muscles.

4. *Bilateral asymmetric dissociated vertical deviation masquerading as unilateral double elevator palsy. A report of four cases (Khawam E, Younis M, Shoughary A, Orm SB, Binocul Vis Strabismus Q 2001;16(4):285-90)*: The authors emphasize the importance of this difficult clinical situation in order to assist and improve in its diagnosis and management. They report 4 patients who had a unilateral DEP and increased hyperdeviation upon tilting the head to the contralateral shoulder. Two patients had surgery to the eye with the presumed diagnosis of DEP, consisting of recession of the inferior rectus muscle in one patient and a Knapp procedure in the second patient. The other two patients had weakening surgery of the superior rectus muscle of the contralateral eye. *Results*: The marked limitation of elevation in the eye with pseudo- DEP was either restored to normal or very satisfactorily improved. Bilateral DVD appeared in all four patients immediately after surgery. *Conclusion*: Bilateral asymmetric DVD can mimic unilateral DEP due to inhibitional palsy of the elevators. Meticulous diagnostic tests can reveal the DVDs.

InformIT

News Flash
Microsoft is coming with its new desktop Operating System and Office product "Windows XP" and "Office XP" respectively. The XP stands for experience. Windows XP will be expected at the end of this year. The new release of Microsoft Office "Office XP" expected sometime in this year, will integrate Hotmail and MSN Messenger with Office's Outlook e-mail program. It will also include a new feature that will automatically save a document when a computer crashes.

The following are a few "Timesavers" from Ascent, a Times of India Publication (Thursday special in the Times of India Daily):

1. *Updating online*: If you Microsoft Windows / Office start at http://windowsupdate.microsoft.com. This will automatically detect many updates your computer needs. Another site, http://office.microsoft.com will indicate many useful add-Ins available for Word, Excel etc. If you want more, check the Websites of your printer, videocard, scanner etc. and look for the Support / Download sections. You shall find that new versions of software will give you added functionality, e.g., allowing you to send the scanned documents to a printer of a different brand than that of the scanner.

2. *To stop a group of words from spilling over two lines* in Microsoft Word try this: Hold down Ctrl and Shift while hitting the space bar. For instance if you want the words "The Right Honorable Gentleman" to stay together, do it this way.

3. *Lotus Notes* has a built-in "Web Browser" which will allow you to directly open the URLs that you receive in "Notes e-mail". Either click the URL icon or hit Ctrl-L. The latter will open an address box into which you can type the URL. A new tab will open with the web page which you can close by clicking x or hitting the "Esc" key on your keyboard. There are navigational short cuts in the top right hand corner of your Notes client window.

4. *While it is easy to adjust the default screen fonts in Lotus Notes 5*, using the "Preferences" option, it can not be done in earlier Notes. You have to open the "notes.ini" file in the c: lotusnotesfolder. Open the file with Notepad (use start/find if it is not in this folder) and add the following line (without quote marks): "Display font adjustment=x", where x is the number of point you wish to add to the default size. Start with small and go up. 25 is the maximum.

SHORT REVIEW ARTICLE ON STRABISMUS

NONPARALYTIC-INCOMITANT DEVIATIONS: DUANE'S RETRACTION SYNDROME PART 1

By: Dr.S.A.Patney

(NOTE: This short review article is presented in 2 parts. The second part will be published in InteRyc volume 2, 2002. The first part is given in the following text. References will be included in part 2.)

The most commonly seen among the nonparalytic incomitant mechanical (restrictive) strabismus cases are those of Duane's retraction syndrome. It is a congenital disorder involving dysfunction of horizontal recti. In addition, there may be a dysfunction of the oblique muscles as well, mostly that of inferior oblique. These cases are difficult to treat. They can not be cured, only improved.

Definition

The main features of this syndrome are the following:

1) Significant/marked/gross restriction/absence of abduction
2) Often a mild/moderate limitation of adduction
3) Narrowing of the palpebral fissure and retraction of the globe in adduction
4) Widening of the palpebral fissure and slight protrusion of the globe in abduction
5) Upshoot or downshoot in adduction
6) A deviation is always present in the direction of restriction of motility but may be absent in primary position in certain cases.

History

First described by several ophthalmologists (Heuck, Stilling, Turk, Bahr, Sinclair, Wolff and others) in eighteen nineties before Duane, this syndrome is known in Europe as Stilling-Turk-Duane retraction syndrome. Duane analyzed 54 case reports available at that time from the literature, summarized clinical findings, reviewed the previous articles and presented theories on pathogenesis and treatment.
There are hundreds of papers published on this anomaly including many reviews. A comprehensive and up to date description has been provided by Jampolsky.[1]

Etiology

There seem to be many different views as regards the cause of Duane's syndrome. It is possible that there is more than one factor responsible in different cases. The various theories are as follows:

(a) Heredity
(b) Embryopathy
(c) Musculofascial (structural) anomaly
(d) Neurologic or innervational anomaly, probably in the brain stem

Each one of the 4 main theories needs some elaboration.

Heredity

- Heredity seems to play a part in the etiology of Duane's syndrome
- Quite a few authors have reported a dominant transmission of this anomaly
- Its presence has been reported in monozygous twins[2 and 3]
- A few genes have been located, which are supposed to be associated with other systemic anomalies like brachio-oto-renal syndrome[4] and urogenital development.[5]

Embryopathy

Some of the reports, which support this view, are as follows:

It is possible that the cause of Duane's syndrome is teratogenic in nature. Cross and pfaffenbach[6] proposed that sporadic cases of Duane's syndrome may be due to a common teratogenic stimulus at 8 weeks of gestation.

Duane's syndrome has been known to occur in patients suffering from thalidomide syndrome[7 and 8]

Duane's syndrome has been reported to occur in association with Fetal alcohol syndrome. It would seem that it damages the developing abducens nuclei in the middle of the first gestational trimester.[9]

Musculofascial (structural) anomalies

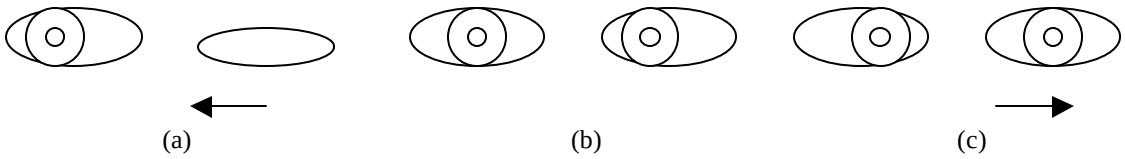
Several articles in literature have reported various types of structural anomalies as mentioned below:

- Tight, fibrotic and inelastic lateral rectus in the affected eye.[10 and 11] We have found this particular finding almost in all cases of Duane's syndrome we have operated upon. The length, elasticity and hardness or fibrotic content varies from case to case but lateral rectus has never been found normal in our cases. Sometimes the medial rectus is also short, hard, inelastic and tight. In such cases one would expect a retraction of the globe and consequent narrowing of the palpebral fissure in abduction also but this has not been the case in our experience.
- Fibrous bands under the lateral rectus muscle, restricting its action and retracting the globe on adduction.
- A posteriorly inserted medial rectus, which acts as a retractor bulbi rather than an adductor.
- A band attached to the globe behind the medial rectus insertion has the same effect as the last. Noorden[12] reported a case of Duane's syndrome type I in which a band originating in the apex of the orbit was inserted 6 mm behind the insertion of the medial rectus.

Neurologic or innervational anomalies

Many electromyographic studies have been reported with evidence that the cause of Duane's syndrome may be neurological rather than anatomical or structural. Co-contraction of the lateral rectus and the direct antagonist (the medial rectus) has been shown to be taking place that may be causing the retraction of the globe. During attempted abduction there is no electrical activity detected in the lateral rectus. On the other hand, when the eye is adducted, there is active electric potential seen in lateral rectus as well as in the medial rectus proving the presence of abnormal innervation (figure1).

Figure 1 (diagrammatic representation), showing L. ET in PP, restricted ocular motility and electrical activity in the lateral and medial recti muscles during abduction and adduction in a case of Duane's syndrome, type I, left eye:



(a) (b) (c)

LMR recording:

LLR recording:

(a) Dextroversion; (b) Primary position; (c) Levoversion;
Legend: LMR= left medial rectus muscle, LLR= left lateral rectus muscle.
On electromyographic study LMR is showing good electrical activity along with LLR in adduction OS and no electrical activity in left lateral rectus during abduction (paradoxical innervation).

According to Breinin[13] who was the first to report the paradoxical innervation resulting in the abnormal electrical response of the lateral rectus muscle, this abnormal co-contraction of the two antagonists (the medial and the lateral rectus of the same eye) causes the retraction of the eye ball on attempted adduction. This view has gained widespread support.

The findings in favor of this view:

- Electromyographic studies show the typical paradoxical electrical activity in the two antagonists, that is to say, strong electrical impulses in the lateral rectus during adduction along with those in medial rectus and an absence of electrical activity in the lateral rectus during attempted abduction. As we know, the main action of lateral rectus is abduction. Thus normally there should be electrical activity in the muscle during abduction (or attempted abduction). Breinin proposed that the increased electrical activity in lateral rectus during adduction is a reflex to the stretching of the muscle because it gets stretched during adduction (as it is hard and short). Normally when the medial rectus is contracting in adduction, the lateral rectus, its direct antagonist relaxes.

- Blodi[15] conducted experiments in which he recorded the electrical activity in a non-stretched muscle, which had been detached from the globe. The two muscles still showed the paradoxical innervation and co-contraction with lateral rectus demonstrating the presence of electrical potentials during adduction.

The findings challenging this view:

Case report[14] of a patient with Duane's retraction syndrome type II pointed to an absence of retraction of the globe despite the presence of co-contraction of the lateral rectus and medial rectus during adduction. The authors interpreted this finding as an indication that co-contraction alone is not the cause of the retraction of the globe. There should be a mechanical factor as well (for instance, a short and hard lateral rectus). But this seems to have been disproved by the observation of Blodi et al[15], as mentioned above.

The important points regarding the innervational theory:

- The retraction of the globe is due to co-contraction of the two antagonists (medial and lateral rectus muscle of the same eye). This view has been challenged[14] but still enjoys widespread support.

- The co-contraction is due to paradoxical innervation of the two muscles, one supplied by the III C N (medial rectus) and the other by the VI C N (lateral rectus). When both contract at the same time the globe retracts. On electromyography there is simultaneous electrical activity in the antagonists, medial and lateral rectus muscles.[16]

- There is no electrical activity in lateral rectus during abduction and significant to marked activity during adduction[17] or attempted adduction (figure 1).

- *The upshoot and the downshoot in adduction have* been explained by various theories as mentioned below:

  1) Anomalous synergistic innervation has been shown electromyographically to exist between the medial rectus and the superior or inferior oblique muscles, causing downshoot or upshoot in adduction respectively. It has also been found between the medial rectus and the superior/inferior rectus muscles.
  2) Older theory (Duane and others) was that the upshoot or downshoot of the eye in adduction is due to the overaction of the oblique muscles. The overaction of the obliques was explained in various ways.
  3) Yet another theory put forward in late 1890s blamed the vertical eye movements in adduction on the overaction of vertical rectus muscles.
  4) Another view that it is due to a *leash effect*[18, 19 and 20] as the lateral rectus slips vertically on the globe (when it contracts during adduction as happens in Duane's syndrome). But this viewpoint, though supported by a large number of ophthalmologists, has been disputed as magnetic resonance imaging failed to show the slipping of the lateral rectus muscle during up and down-shooting in two cases of Duane's syndrome.[21] In fact it was the globe slipping under the muscle.[22]
     The so-called "*leash effect*"[22] has been described in greater detail under the heading of *general clinical features* of Duane's syndrome.

- *Narrowing of the palpebral fissure* has been blamed on various factors too. The different views are as follows:

  a) It is a passive phenomenon secondary to the retraction of the globe.
  b) It is due to decreased innervation to the levator palpebrae on adduction.[22]
  c) It is due to a reorganization of the central oculomotor pathway.[23]

- *Retraction of the globe has been explained by various authors as follows*:

  - The co-contraction of lateral and medial rectus muscles causes it.
  - When the medial and/or lateral rectus muscles are inserted further back than their normal origins, especially behind the equator, these muscles act as retractors rather than adductor or abductor (respectively). Such cases have been reported.

- *The recent theory of innervational disturbance of the brain stem* has gained considerable support among the strabismologists. *According to this theory Duane's syndrome is due to innervational anomaly of the brain stem and not due to structural defects of the extraocular muscles.* Electromyographic studies definitely indicate that *Duane's syndrome is due to a neurogenic anomaly of the supranuclear, nuclear or infranuclear part of the abducens. Any or all of them may be absent or hypoplesic. In addition to the anomaly of the abducens there is innervation of lateral rectus muscle by the branches of oculomotor or III cranial nerve on the affected side.*[24]
  Data from autopsies carried out on certain cases of Duane's syndrome have proved that this condition is due to an anomaly of the VI cranial (Abducens) nerve and/or its nucleus.
  The following case reports are particularly relevant:

A. In 1946 Matteucci found the VI cranial nerve missing and the VI N nucleus hypoplastic on the side of Duane's retraction syndrome.[25]
B. A bilateral case of Duane's syndrome type III was reported[26] in which nuclei and the nerves of the abducens were absent on both sides and the lateral recti were innervated with branches from the inferior branch of the III cranial nerve.
C. A case of unilateral Duane's was reported in which the VI (abducens nerve and nucleus were missing on the side of the anomaly.[27]

- As already mentioned, systemic anomalies have been found to be present in cases of Duane's syndrome not uncommonly. Some of the conditions reported are[25]:

1) Thalidomide encephalopathy
2) Anomaly of vestibulo-ocular reflex
3) Auditory evoked responses
4) Optokinetic nystagmus
5) Crocodile tears (gustolacrimal reflex)
6) Primary brain stem anomalies
7) Fetal alcohol syndrome

- The rather high incidence of ocular (see under clinical investigations) and systemic malformations reported in cases of Duane's syndrome has led to an interesting theory to explain them, that *there is a common teratogenic stimulus at 8 weeks gestation that causes these malformations*[6] in the embryo.

Note: We have many cases of Duane's on our records but we have rarely come across other ocular anomalies and any systemic malformations. I also ponder at the infrequency of twins in our country. In the western countries they are comparatively much more frequent. So is the case with many congenital anomalies.

Summary of the etiology

There are different views regarding the etiology of Duane's retraction syndrome. The main ones are structural anomalies, neurogenic or innervational anomalies, heredity and embryopathy. At present we can only say that any one theory does not seem capable of explaining all the cases. Right now the theory enjoying maximum support is that" Duane's syndrome is an innervational disturbance with its origin in the brain stem rather than being just a structural (musculofascial) anomaly". As mentioned elsewhere in this chapter an absence or hypoplasia of the VI or abducens nucleus has been reported which will cause lateral rectus (supplied by VI or abducens nerve) palsy. This palsy in turn may cause the degeneration and fibrosis in the muscle. It can also cause a branch of the III cranial or oculomotor nerve to supply the paralytic lateral rectus. This causes the paradoxical innervation and the cofiring (co-contraction) of the medial rectus and the lateral rectus muscles on attempted adduction.
But none of the above deductions and views are conclusive and we need many more complete case reports and data to come to a conclusion. If we take it as being an anomaly of innervation originating in the brain stem, we have to consider the structural anomalies found

in the muscles and the fascia to be secondary (to the original palsy due to the brain stem anomaly). The fibrosis that is found in the lateral rectus muscles in some cases could be consequent upon degenerative changes that occur in a disused muscle. Unfortunately not many biopsies or autopsies have been done or reported in cases of Duane's syndrome.

Prevalence

Duane's syndrome occurs in about 1% cases of strabismus.[28] Left eye is affected 3 times more often. It seems to be more common in females (54 to 46%). Unilaterality is about 5 times more common.[28, 29, 30]

Classification and clinical picture

Huber classified Duane's retraction syndrome into 3 main types[31] on the basis of clinical and electromyographic findings. The most typical and common signs are an absence or marked limitation of abduction, slight limitation of adduction, narrowing of palpebral fissure and retraction of the globe in adduction. In addition there is often an upshoot or downshoot or both in adduction.

Huber's classification[31] of Duane's retraction syndrome (1974)

Type I Duane's retraction syndrome (DRS)
Type II DRS
Type III DRS

In addition to these groups a fourth group has been described in the classification of Duane's syndrome recommended by Pratt-Johnson[32] as follows:

Clinical picture of Type IV (?) DRS:

Synergistic divergence[33, 34, 35 and 36] is present along with a deficiency of adduction. There is simultaneous divergence or abduction of the two eyes in attempted adduction of the affected eye. Sometimes this condition is bilateral. The eyes can not be straightened in any position and they are always divergent (exotropic).

Pratt-Johnson justifies its classification as DRS type IV saying " Since this rare condition appears to be an innervational anomaly with simultaneous co-contraction of both lateral recti, it would appear reasonable to classify it as Duane's type IV".

General clinical features in cases of DRS

The most remarkable features common to all groups are:

⇨ *Compensatory head posture*: Face turn towards the side of maximum deviation to place the eyes in a position of minimum or no deviation to achieve binocular single vision.

- Relatively small *deviation in primary position* in relation to the degree of limitation of movement: Thus there may be a gross limitation of abduction and yet a small esotropia, say10 degrees, in primary position. If it were a case of ocular palsy the deviation would be large, that is to say at least 25 degrees or more (proportional to the severity of palsy).

- *Secondary angle of deviation* (fixing with the affected eye) is larger than the primary angle (fixing with the normal eye), as is the case with ocular palsy.

- *The restriction of ocular motility* is often severe, for instance in DRS type I the abduction is either absent or grossly limited. Similarly in DRS type II the adduction is grossly defective. In DRS type III both movements are usually grossly limited.

- Despite the gross defect of ocular motility the *angle of deviation in the primary position* is relatively less, that is to say it is disproportionately small.

- There is almost always *retraction of the globe* during adduction or attempted adduction.

- Another fairly constant feature is the *narrowing of the palpebral fissure* during adduction or attempted adduction.

- *Upshoot/downshoot or both* during attempted adduction is a pretty common feature of Duane's syndrome. It is particularly important in those cases where the upshoot is so marked that it creates a cosmetic problem. In some cases the cornea disappears from the view and the face looks really ugly. The old theory that it is a result of the overaction of the oblique muscles has not stood the test of time. Weakening the obliques does not usually result in abolishing the up or downshoot. More recently the up or downshoot have been blamed on various factors but the two viewpoints having maximum support are:

  (1) `That there is synergistic innervation or co-firing of medial rectus and the vertical muscles (obliques or the vertical recti). As was mentioned under the heading of etiology this theory is supported by electromyographic findings in a few case reports.

  (2) "Leash (or the bridle) effect".[22] When the medial and the lateral rectus muscles co-contract they are at high tension and stretched. This tension results in the upshoot or the downshoot because these muscles slip over the globe. There is no doubt that under tension they will enhance the elevating effect when the eye is slightly elevated and the depressing effect when the eye is slightly depressed. However, it has been found on CT (computed tomography) scan and magnetic resonance imaging (MRI) that it is the globe that slips under the muscles. The muscles do not slide over the globe. This effect of the tight horizontal muscles on the globe can be reduced by posterior fixation sutures in the horizontal muscles or by recessing them.

- *Binocular functions are present*. They can be demonstrated easily if the eyes are placed in the direction of least or no deviation even if examination in the primary position fails to show their presence.

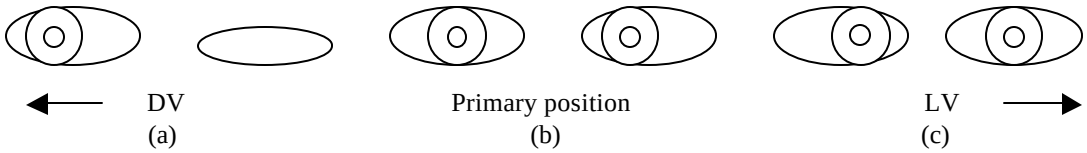
⇨ *Amblyopia does not seem to be common* as binocular fixation is retained in at least one direction. Thus the two eyes in binocular fixation are constantly used even if this position is only maintained with the help of compensatory head posture. In many cases of Duane's syndrome there is no manifest deviation in primary position and maintaining binocular fixation becomes easier.

In the past it was thought that there was a high incidence of anisometropia and amblyopia in the cases of Duane's syndrome. However, more recent studies have demonstrated that the incidence of anisometropia and amblyopia in the patients suffering from Duane's retraction syndrome is almost the same as in normal people.[37 and 38] However, there are reports to the contrary also.[29, 39 and 40]

NOTE: We have not come across any significant degree of amblyopia in cases of Duane's syndrome. The high incidence of amblyopia reported in the older literature could have been due to the fact that the vision might have been tested with the head straightened. If there is a gross limitation of adduction or abduction so that the eye can not be brought to the primary position and with the head straight there is a manifest deviation, the vision test is bound to give a faulty result. The vision test in such cases should be done with intact compensatory head posture so that the image of the object (test types) falls on the fovea of the deviating eye.

⇨ *Electromyography* shows co-contraction of the two antagonists, that is, the medial rectus and the lateral rectus. In some cases it has indicated the presence of a co-contraction of medial rectus and one of the oblique muscles during upshoot or downshoot of the affected eye in adduction. Read the following text for detailed description and references.

Figure 2 (diagrammatic), Clinical features of Duane's retraction syndrome type I, left eye:



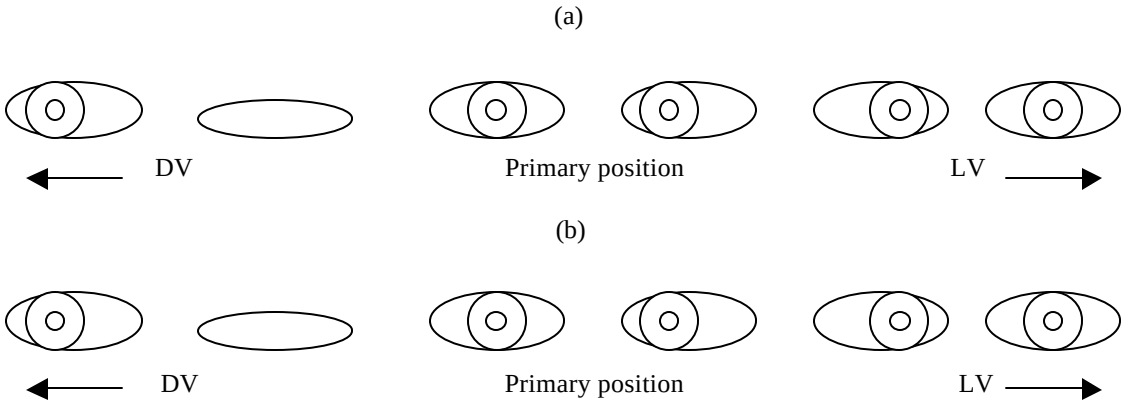
In DV (dextroversion): Left eye shows slight limitation of adduction, narrowing of palpebral fissure and retraction of the globe (a).
In PP (primary position): Left eye shows an esotropia (b).
In LV (levoversion): Left eye shows an absence of abduction (c).
Electromyographic findings in DRS type I: Paradoxical electrical activity seen in L medial and L lateral rectus (LR) during adduction. No electrical activity seen in LR during attempted abduction.

Clinical picture of DRS type I:

DRS type I presents the most common features (figure 2) and characteristic picture of DRS. It is usually *unilateral*. The typical features are:

- ⇨ *Compensatory head posture*: Face turn towards the affected side to achieve binocular single vision (binocular functions present in the direction of binocular fixation)
- ⇨ *Deviation: Esotropia* in primary position (about 10-30 PD), *gross esotropia in the direction of abduction* of the affected eye (attempted abduction) and *no deviation or slight exodeviation in the direction of adduction* of the affected eye
- ⇨ *Visual acuity is usually 6/6 in each eye.*

Figure 3, (a) and (b), DRS type I, left eye (diagrammatic representation), showing (a) upshoot and (b) downshoot (respectively) in adduction:



Typical clinical findings: Absence of abduction, slight limitation, narrowing of left palpebral fissure, retraction of left eye ball, upshoot/or downshoot of left eye in adduction. *Electromyographic readings, left eye*: In adduction, electrical activity is expected to be found in left medial rectus, left lateral rectus, left inferior oblique and left superior oblique (but none in lateral rectus during abduction).
Legend: DV= Dextroversion; LV= Levoversion; DRS= Duane's retraction syndrome.

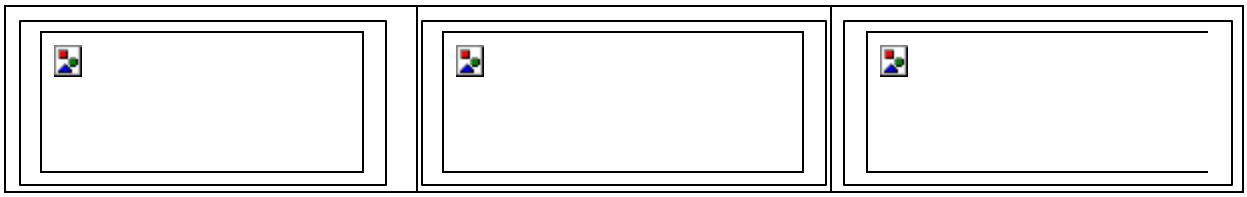
- ⇨ Angle of deviation more when the affected eye fixates (secondary deviation). The type and angle of deviation change dramatically from one to the other direction.
- ⇨ Angle of deviation in primary position relatively much smaller than it is in cases of true palsy, which finding is typical of nonparalytic strabismus.
- ⇨ Total absence or marked limitation of *abduction. The affected eye does not abduct beyond the primary position.* Slight limitation of *adduction* may be there.
- ⇨ *Narrowing of palpebral fissure* in adduction and often a *widening* in abduction.
- ⇨ *Retraction of the globe* in adduction, which may be severe in some cases.
- ⇨ *Upshoot/downshoot* or both may be present in adduction [figure 3, (a) and (b)].
- ⇨ *Binocular functions are usually intact and can always be shown in the direction of the binocular fixation. Titmus test shows 40 arcs of stereopsis when done with CHP.*
- ⇨ *Electromyographic findings*: *Absence of electrical activity* in the lateral rectus during attempted abduction but presence of it during adduction (*paradoxical electrical activity due to anomalous innervation).*

(To be continued in volume 2, 2002)

SPOT THE DIAGNOSIS (5)

Note: Please have a good look at the composite photographs given below and write to us your diagnosis, your name and JIM number.

Ocular motility chart of a patient:



BOOK SELECTION

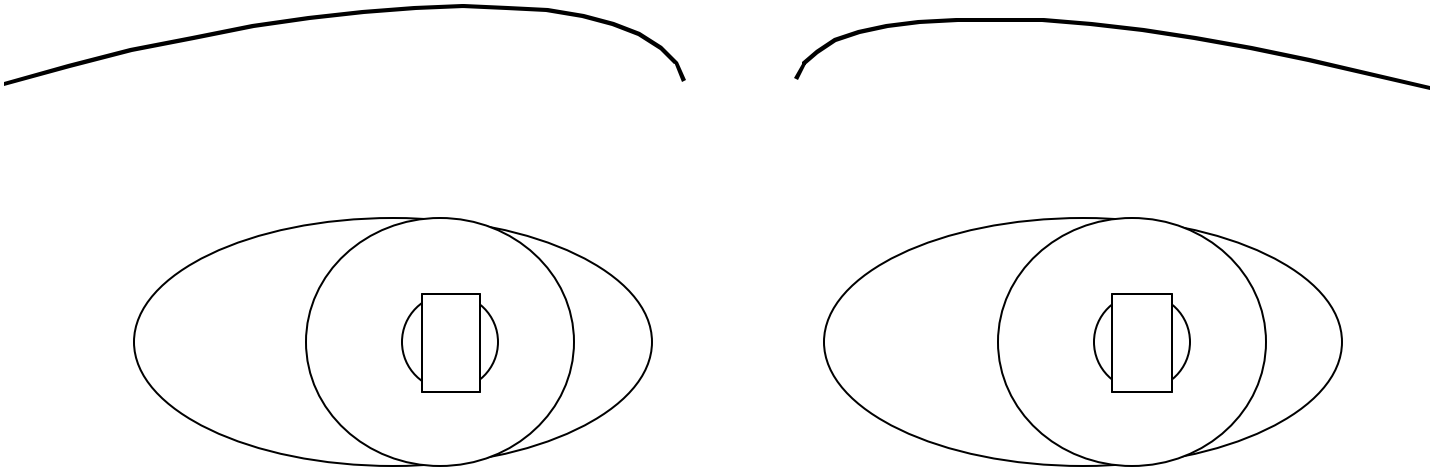
This column is left empty as we have not come across any good new book on strabismology / related subjects. Members are requested to let me know if they do.

EYE-RHYME

(Dr. Prof. N.C. Singhal has sent this entry for the contest 2001)

CARTOON-EYE

(Dr. S.A.Patney)



The famous phrase: Eyes are the soul's windows to the world.

HISTORY-A FEW FIRSTS IN STRABISMOLOGY

Worldwide

(a) Chevalier John Taylor (1703-1772) who performed a successful operation on a boy did first surgery for squint. He was half surgeon and half quack. He must have realized that squint was a disturbance of muscular equilibrium and conceived the idea that dividing a muscle or a nerve can cure it. However, he earned a bad name through many failures, one of them being on the eyes of Bach, the famous musician.
(b) In 1743 George L. Buffon recognized amblyopia and recommended occlusion for it.
(c) In 1839 Johann F. Dieffenbach performed the first successful tenotomy.
(d) du Bois-Reymond (1952) and Mackenzie (1954) were the first to suggest orthoptic treatment but it was elaborated and established as a technique by Javal (1864-96).
(e) Prof. A. Bangerter of Switzerland and Prof. C. W. Cuppers of Germany first advocated pleoptic treatment for amblyopia. However, their approach was different.

(Continued overleaf on page 26)

CME (Member of the year) Quiz no.1, 2002:

(NOTE: Please encircle the appropriate number or letter, fill in the blanks or describe as required. Then cut along the black line and return by mail. Turn over for the update-questionnaire)

1. *Please give a list of the minimum number of instruments required by a strabismologist*:
   (1) .
   (2) .
   (3) .
   (4) .
   (5) .

2. *Please enumerate names of the test types that can be used for preschool children:*
   (a) .
   (b) .
   (c) .
   (d) .
   (e) .
   (f) .

3. *Are the following statements true? Encircle the correct answer (yes/no)*:
   (a) SIH (Spontaneous Intracranial Hypotension) can cause cranial neuropathies: Yes / No
   (b) Weakening all the four oblique muscles is feasible in cases of DVD: Yes / No
   (c) Embryopathy can cause Duane's Retraction syndrome: Yes / No
   (d) A posteriorly inserted medial rectus acts better as an adductor rather than as retractor bulbi: Yes / No

4. *Please fill in the blanks:*
   (1) Bilateral asymmetric DVD can mimic unilateral …….
   (2) To keep a group of words together, hold down Ctrl and……..while hitting the space bar.
   (3) Electromyographic studies indicate the cause of Duane's syndrome to be neurological rather than …….
   (4) Co-contraction of medial and lateral recti in Duane's retraction syndrome's is due to……...

5. *The main features of Duane's Retraction syndrome are:*
   (1) .
   (2) .
   (3) .
   (4) .
   (5) .
   (6) .

HISTORY-A FEW FIRSTS IN STRABISMOLOGY

In **India**

(Continued from previous page)

(A) Dr.H.L.Patney started running an orthoptic clinic with the help of a compounder at Sitapur Eye Hospital whom he taught orthoptic exercises, in early nineteen fifties.
(B) Dr. M.K. Mehra and Dr. Sudha Awasthi (now Patney) started the first Orthoptic clinic at K.G. Medical College, Lucknow in 1957. She ran it for 2 ½years.
(C) Dr. H.L. Patney started the first Orthoptic Department and the first Orthoptic School of India at Eye hospital, Sitapur, U.P. in 1959 and Dr. Awasthi (now Patney) Pleoptic dept. in 1961.
(D) Dr.Sudha Awasthi and Dr. J.M. Pahwa started the first Indian Orthoptic Journal in 1964.
(E) Dr. H.L.Patney and Dr. Sudha Awasthi started the All India Strabismological Society in 1967 and held India's first workshop on strabismus in 1967.

Please answer the questions or encircle the correct answers, cut along the black line and send by return mail)

Update questionnaire

1. I have been receiving InteRyc regularly, sent 2 monthly in 1998 (6 volumes) and 3 monthly (4 volumes) since 1999: Yes / No
2. My address remains unchanged: Yes / No
3. My email address: My URL:
4. My phone No.: My FAX No.:
5. My pager No.: My mobile phone No.:
6. I am enclosing herewith a demand draft for Rs100 / *cheque* for Rs118 (year 2002 subscription) / DD for Rs200 or *cheque* for Rs218 (for the years 2001+2002) / DD for Rs 300 or *cheque* for Rs318 for 2000+2001+2002.
7. I would like to resign from the membership of AISS and JKAIS: Yes / No
   If answer is yes, please write the reason if you don't mind. It may help to improve our system.
8. My membership No. is: JIM-
9. My name and present address are:

For fellowship candidates only:

10. I have paid for …….. installments.
11. I have received ……..Installments.
12. I have sent back solved question papers of …… installments.
13. I have the following problems with the course (please attach a sheet if required):

14. I have paid membership subscription for the years 98 / 99 / 00 / 01/02 / all (97-02)
15. I would like to come for the hands on experience in the month of …… 2002.
    (*Please inform at least 3-4 months in advance for arrangements to be made*)

RATE YOUR PERFORMANCE YOURSELF

The results of the "CME Quiz NO. 3 and 4" and those of "Spot the Diagnosis" No.3 and 4 are given on this page and the next.

Correct answers to the CME (Member of the year) Quiz no.3, 2001:

(NOTE: Please encircle the appropriate number or letter, fill in the blanks or describe as required. Then cut along the black line and return by mail. Turn over for the update-questionnaire)

1. Please give short definitions (in a few words) of the following conditions:
   (a) Sursumvergence : Disjugate movement of two eyes in two different vertical directions.
   (b) Triplopia: Three objects seen with two eyes (two with one eye and one with the other)
   (c) Vertical angle Kappa: It simulates a hypertropia and is usually caused by a vertical macular displacement
   (d) Vision deprivation: Lack of stimulation of retinal cells, either as result of squint or due to obstruction in media
   (e) V-exotropia: Exotropia in upgaze is more than that in downgaze.

2. Do the pair of names given below convey the same meaning? Encircle the correct answer:
   (a) Sursumversion/elevation of an eye: No
   (b) Vergence/Conjugate movements: No
   (c) Principal visual direction/Visual axis: No
   (d) Dysthyroid oculomyopathy/exophthalmic ophthalmoplegia: Yes

3. Are the following statements true? Encircle the correct answer (yes/no):
   (1) Thyroid oculopathy may present as a case of restrictive strabismus: Yes
   (2) One of the main features of thyroid oculopathy is proptosis: Yes
   (3) Parks's adherence syndrome is always due to surgery on inferior oblique: Yes
   (4) Ocular motility restriction in thyroid oculopathy is symmetrical: No

4. The main features of thyroid oculopathy are:

   (1) Lid retraction
   (2) Proptosis
   (3) Lid and periorbital edema
   (4) Swelling and enlargement of extraocular muscles, leading to limitation of ocular motility, particularly elevation
   (5) Optic neuropathy
   (6) Sometimes a secondary rise of intraocular pressure

5. The positive findings generally observed on echography are:

   (1) Hypertrophied extraocular muscles (B-Scan)
   (2) Accentuated orbital walls (B-Scan)
   (3) High acoustic activity of extraocular muscles (extraocular muscles) on A-Sacn)
   (4) Increased reflectivity and heterogeneity of extraocular muscles
   (5) So lid thickening of nerve sheath of the optic nerve
   (6) Swelling of the lacrymal glands

SPOT THE DIAGNOSIS No.3

Correct answer: Right IV CN (Superior oblique) Palsy

Correct answers to the CME (Member of the year) Quiz no.4, 2001:

(NOTE: Please encircle the appropriate number or letter, fill in the blanks or describe as required. Then cut along the black line and return by mail. Turn over for the update-questionnaire)

5. *Please give short definitions (in a few words) of the following conditions*:
   (a) Sursumvergence: Disjugate vertical movement of the two eyes in opposite directions
   (b) Sensory heterotropia: Strabismus secondary to loss / poor vision in one eye.
   (c) Angle Kappa: Angle between the visual axis and the mid-pupillary axis.
   (d) Vision deprivation amblyopia: A mblyopia secondary to visual deprivation
   (e) X-exotropia: Manifest divergent squint increasing in elevation and depression

6. *Do the pair of names given below convey the same meaning? Encircle the correct answer*:
   (a) Sursumvergence / elevation of an eye: No
   (b) Convergence / Adduction: No
   (c) Principal visual direction / Fixation axis: No
   (d) SMP / Single macular perception: No

7. *Are the following statements true? Encircle the correct answer (yes/no*):
   (1) Stereopsis is present in infants aged 0-2 weeks: No
   (2) Acquired hypotropia +absent elevation +positive FDT on inferior rectus =Thyroid Ophthalmopathy: Yes
   (3) IT: Facial recognition is a better technique than conventional recognition techniques: Yes
   (4) The bellies of extraocular muscles are the primary site of thyroid ophthalmopathy: Yes
   (5) Corticosteroids have a place in treatment of thyroid ophthalmopathy: Yes

8. *The main findings on pathological examination in thyroid oculopathy ar*e:
   (a) Proliferation of fibroblasts
   (b) Secretion of Mucopolysaccharides and production of collagen
   (c) Degeneration of striated cells of extraocular muscles with collection of collagen
   (d) Fibrosis of extraocular muscles
   (e) Increased orbital contents due to swollen and fibrosed extraocular muscles

5. *The main complications after surgery for thyroid oculo-orbitopathy are:*
   (1) Severe postoperative inflammation
   (2) Retraction of lower lid
   (3) Late slippage of inferior rectus tendon
   (4) A pattern exotropia after bilateral recession of inferior rectus muscles.
   (5) Undercorrections and overcorrections

SPOT THE DIAGNOSIS No.4

Correct answer: Right III CN (Oculomotor) Palsy