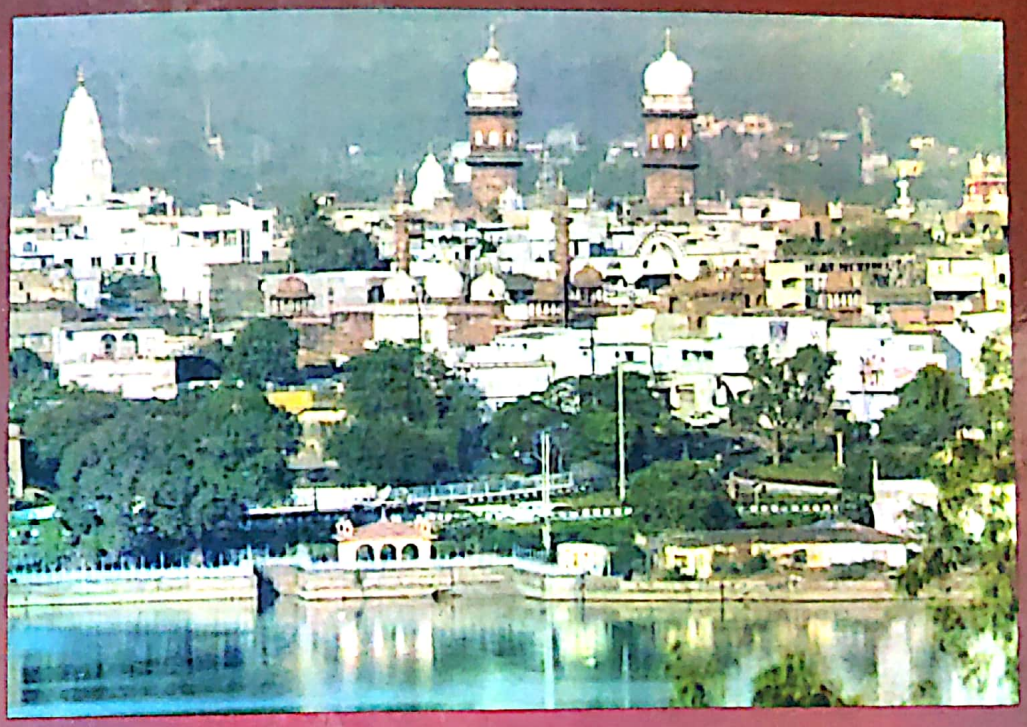
BDOS SCIENTIFIC HIGHLIGHTS

Vol. -1 January -2014



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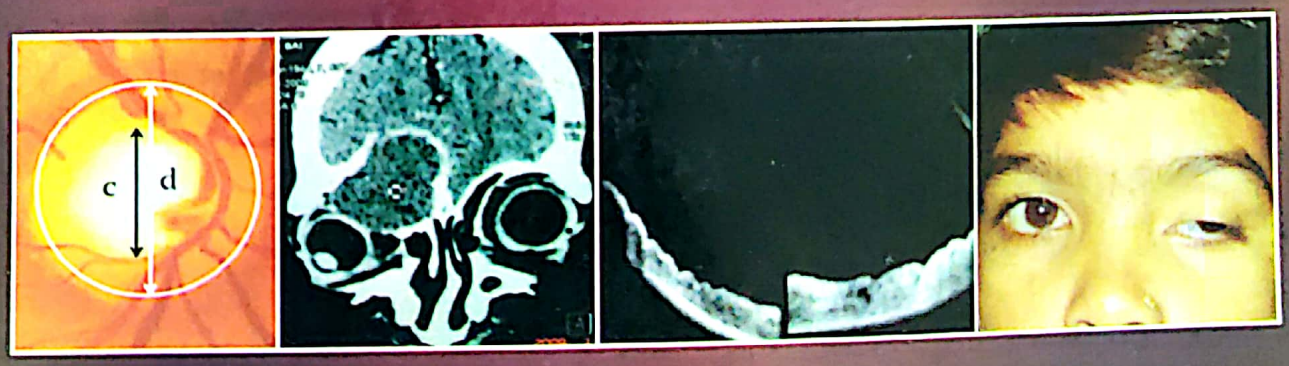

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From the Editor's Desk

Dear friends,

HAPPY AND PROSPEROUS NEW YEAR,

It gives me immense pleasure to add a new feather in cap of BDOS in the form of first issue of "BDOS SCIENTIFIC HIGHLIGHTS". I hope further improvisation in the next issue can be done following inputs, views and expert comments.

To begin with, three very interesting clinical cases "A case of Frontal Sinus Mucopyelocoel with Orbital and Intracranial Extension " , " Iridotomy in Pigmentary Glaucoma– ASOCT perspective"and "Silicone Sling Frontalis Suspension for Correction of Congenital Ptosis" are included . Cover feature of this issue is step by step optic disc evaluation in our day to day practice to diagnose glaucomatous disc changes in early stages and in normotensive glaucoma in which disc findings are of utmost importance.

I will take this opportunity to request all BDOS members to please update their profiles in the proforma form at the last page of this news letter for the BDOS Directory to be printed later. Looking forward to be active member of BDOS and request to provide articles or case reports for"BDOS Scientific Highlights"

Finally, I thank all authors and advertisers who have supported us in our endeavor to make this dream reality.

With warm regards,

Dr. Vinita Ramnani
ramnanivinita@yahoo.co.in

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"BE A REFLECTION OF WHAT
YOU WOULD LIKE TO SEE IN OTHERS.

IF YOU WANT LOVE, GIVE LOVE.
IF YOU WANT HONESTY, GIVE HONESTY.

IF YOU WANT RESPECT, GIVE RESPECT,
YOU GET IN RETURN, WHAT YOU GIVE

OPTIC DISC EVALUATION IN GLAUCOMA

DR VINITA RAMNANI, VISION CARE AND RESEARCH CENTRE, BHOPAL

ABSTRACT- Glaucoma is defined as a chronic progressive optic neuropathy with typical changes in optic disc with corresponding visual field defect. Intra ocular pressure considered a major causal risk factor. Optic disc evaluation in glaucoma is very important because structural changes precede functional changes i.e. increased cup disc ratio, peripapillary chorioretinal atrophy, splinter hemorrhages and nerve fiber layer defects precede visual field defects. Conventional achromatic automated perimetry detects a visual field defects when 30-50% retinal ganglion cells are lost. Intraocular pressure and automated perimetry has a poor sensitivity for the diagnosis of early glaucoma. According to OHTS without careful optic disc examination one can miss 55% of glaucoma.

INTRODUCTION - Disc can be examined under various heads like size, cup disc ratio, neuroretinal rim, disc hemorrhage, circumlinear vessels and neuroretinal nerve fiber damage. Early diagnosis of glaucoma is important to initiate treatment and prevent progression of disease. Careful meticulous disc examination with correlating findings and high index of suspicion makes diagnosis of early glaucoma easy. Disc can be examined by direct and indirect ophthal-moscope but the best way is stereoscopic examination with lenses. While measuring size of disc consider multiplication factor, for 60 D lenses no adjustment (X 1),With 78 D multiply by 1.15 ,with 90 D multiply by 1.41 and with Goldmann lens by 1.13.

SIZE OF DISC-The normal optic disc shows variability in size, shape and angle of insertion. The optic disc is vertically oval with vertical diameter 7 to 10% larger than the horizontal diameter. The optic disc area varies between 0.80 square mm to almost 6.00 square mm; Indian has 3.4 to 3.5 square mm.Caucasians have relatively smaller optic discs followed by Mexicans, Asians and Afro-Americans. Within a range of -5 to +5 diopters of refractive error optic disc size is almost independent of the refractive error of the eye. Beyond +5 diopters of refractive error the optic disc is significantly smaller and beyond -8 diopters the optic disc is significantly larger than in emmetropic eyes. Optic disc drusen, papilledema and NAION are more common with smaller optic disc while Optic disc pit and morning glory syndrome are more common with larger optic disc.

CUP DISC RATIO-Disc margin is defined by inner edge of white scleral ring and cup is the level at which neuro-retinal rim (NRR) steepens and ratio between cup and disc is called cup disc ratio (CDR). Due to the vertically oval optic disc and the horizontally oval optic cup the cup disc ratios in normal eyes are significantly larger horizontally than vertically. 1.2 million Axons pass through optic disc which fills up the outer part of optic disc is called neuro-retinal rim and the space which is not filled ("left over" space) is called optic cup. The cup disc ratio ranges from 0.0 to 0.9 in a normal population, size varies with size of disc the larger optic disc has larger cup. More than 0.65 cup to disc area ratio and asymmetry between two eyes of more than 0.2 is seen in less than 5% normals. Recordable change in CDR over time is important sign to arouse suspicion of glaucoma.

NEURORETINAL RIM-The neuroretinal rim exhibits a characteristic configuration in normal eyes based on the vertically oval shape of the optic disc and the horizontally oval shape of the optic cup. The neuroretinal rim is usually broadest in the Inferior disc region, followed by the Superior disc region, the Nasal and finally the Temporal disc region (ISN'T rule, as termed by Elliot Werner Philadelphia). The characteristic shape of the rim is of utmost importance in the diagnosis of early glaucomatous optic nerve damage. Inferior rim to temporal rim ratio is 2: 1 while Superior to temporal ratio is 1.5: 1. Large disc have evenly distributed rim with punched out well defined cup and does not follow ISNT rule while small and medium size disc has sloping NRR. Normal eyes have superonasally tilted NRR and eyes with

oblique insertion of optic disc have steep or over hanging NRR. In glaucoma neuroretinal rim is lost in sequential manner inferotemporal - superotemporal - temporal horizontal - nasal inferior - nasal superior area and these changes in NRR correlates with visual field defects. This can be showed by upper nasal quadrant of the visual field defects in early glaucoma and preserved island of vision in the infeortemporal part of the visual field in eyes with almost absolute glaucoma. It indicates that for an early diagnosis of glaucoma especially the inferotemopral and superotemporal disc sectors should be checked. Papillo macular bundle which forms temporal rim is usually last to be damaged in glaucoma. POAG with Myopia and in NTG temporal rim preferentially get cupped earlier leads to field loss near fixation. Changes suggestive of NRR loss can be in the form of loss of physiological shape, broken ISNT rule, increased vertical CDR, backward bowing of the rim tissue with Saucerization of cup or deep extension of the cup in one meridian.

DISC HEMORRHAGE-Splinter-shaped or flame-shaped hemorrhages at the border of the optic disc are a hallmark of glaucomatous optic nerve atrophy. Disc hemorrhages are detected in about 4 to 7% of eyes with glaucoma and mostly present in early stage of glaucoma and NTG, usually located in the infero-temporal or superotemporal disc regions. They are associated with localized retinal nerve fiber layer defects and neuroretinal rim notch which indicate the presence of glaucomatous optic nerve damage even if the visual field is normal.

CIRCUM LINEAR VESSELS- Circum Linear Vessels crosses the optic disc temporally toward macula hugging the NRR and present in 50 % eyes. In early glaucoma as NRR is lost, the vessels does not hug the rim but there is a separation between the blood vessels and the rim which is called "barring of vessels" It implies theneuroretinal rim loss which is very specific of glaucoma.

PARAPAPILLARY CHORIORETINAL ATROPHY-The parapapillary chorioretinal atrophy can be divided into a central beta zone and a peripheral alpha zone. The peripheral alpha zone is characterized by an irregular hypopig-mentation and hyper-pigmentation area showing RPE atrophy producing relative scotoma in visual fields. Beta zone is characterized by visible sclera and large choroidal vessels because of RPE and choroidal atrophy, produces absolute scotoma in visual field. If both zones are present beta zone is always closer to the optic disc than alpha zone. Alpha and beta zones are present in normal; nearly 95 % of normals may have alpha zones while only 20 % of normals may have beta zones. This is frequently located in the temporal horizontal sector, followed by the infero-temporal and the superotemporal regions. In eyes with glaucomatous optic nerve atrophy both zones are significantly larger and beta zone occurs more often than in normal eyes.

RFNL EXAMINATION- It can be assessed by green light of ophthalmoscope, on wide-angle red-free photographs, or by photogrammetric measurements of the retinal nerve fiber layer thickness or by using other sophisticated techniques such as confocal scanning laser tomography (HRT), laser polarimetry (GDx) and optical coherence tomography (OCT). Visibility of the RNFL decreases with age because of age-related reduction of the optic nerve fiber count with an annual loss of about 4000 to 5000 fibers per year. Localized defects of the RNFL are defined as wedge-shaped and not spindle-like defects, running towards or touching the optic disc border. About 20% or more of all glaucomatous eyes especially in early stages and narmotensive glaucoma can have such early RNFL loss, which can also be found in eyes with optic atrophy due to other reasons such as optic disc drusen, toxoplasmotic retinochoroidal scars, and ischemic retinopathies with cotton-wool spots of the retina, after long-standing papilledema or optic neuritis due to multiple sclerosis. Since the localized RNFL defects are not present in normal eyes, they almost always signify a pathological abnormality. In advance glaucoma there may be diffuse loss of RNFL and it may be not visible as a wedge defect. Localized RNFL defects are most often found in the temporal inferior sector followed by the temporal superior sector. Experimental studies have shown that localized RNFL defects can ophthal-moscopically be detected if more than 50% of the thickness of the retinal nerve fiber layer is lost.

PHOTOGRAPHS OF OPTIC DISC EVALUATION IN GLAUCOMA

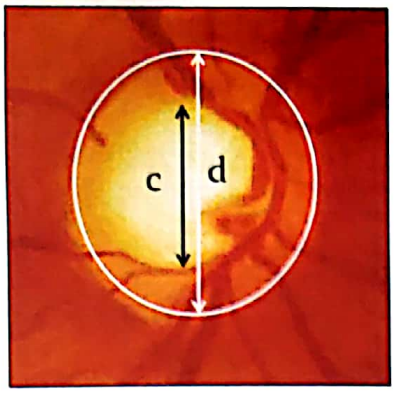

Figure 1 CD Ratio

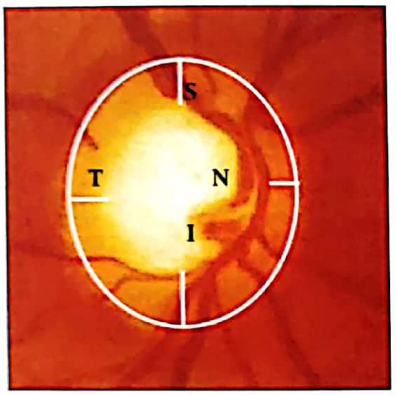

Figure 3 - Neuroretinal rim

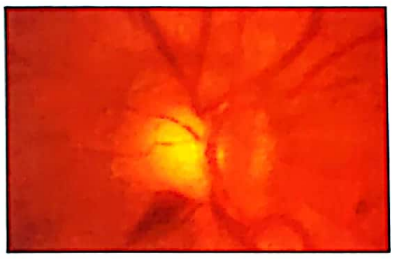

Figure: 4– Disc Heamorrage

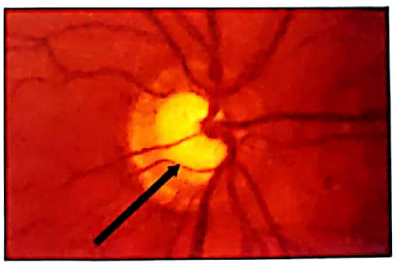

Figure: 5– circumlinear vessel

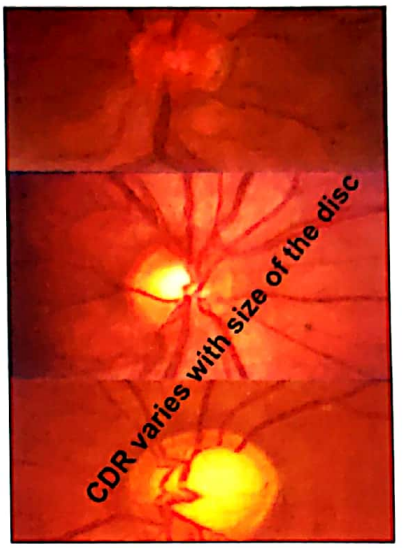

Figure: 2 - Size of disc with CDR

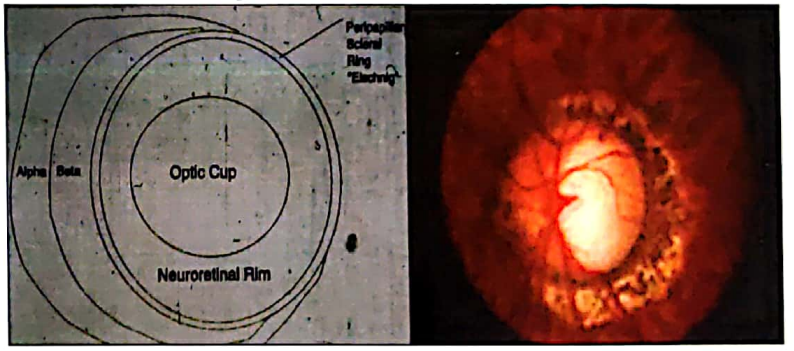

Figure: 6– Parapapillary Chorioretinal Atrophy

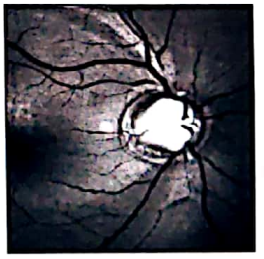

Figure: 7 – Localized RNFL Damage

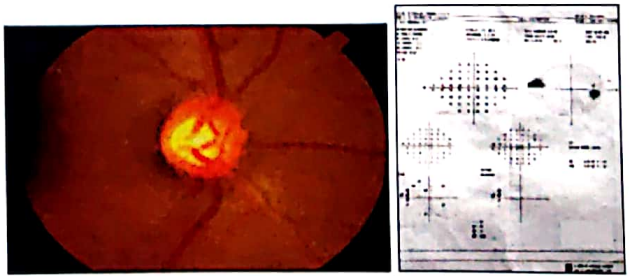

Figure: 8 – Early Disc And Field changes

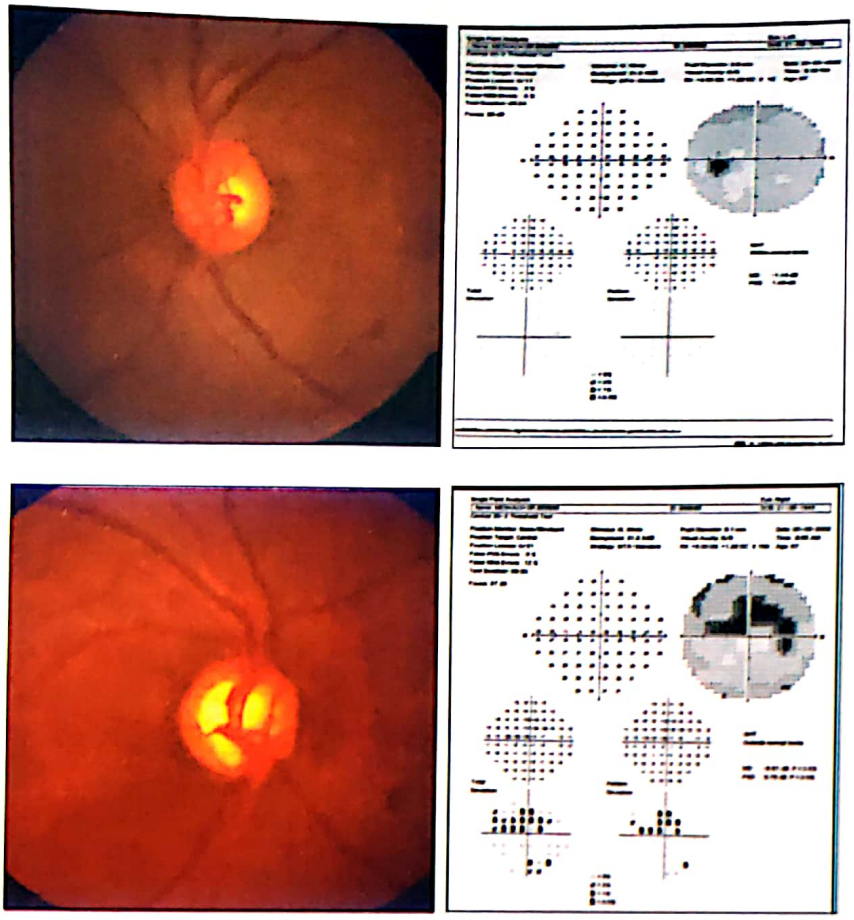

Figure: 9 – Asymetrical Disc and Field changes

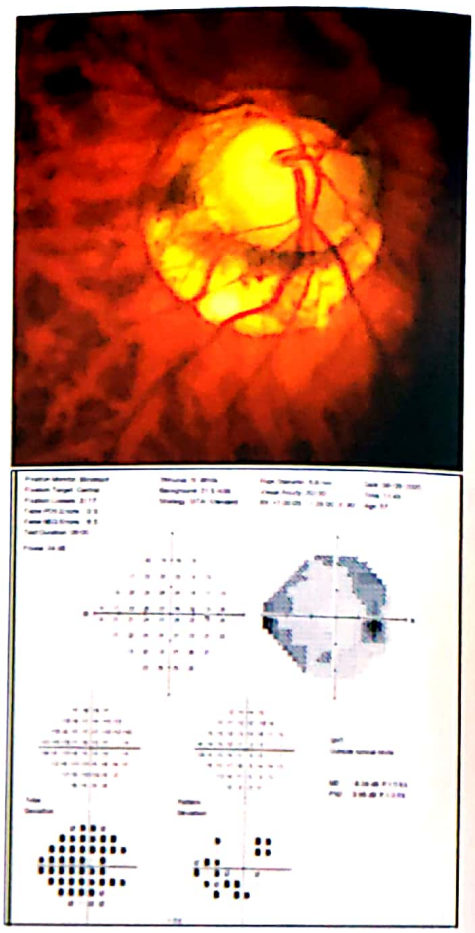

Figure: 10 – Myopic Disc with Glaucomatous cupping and Field changes

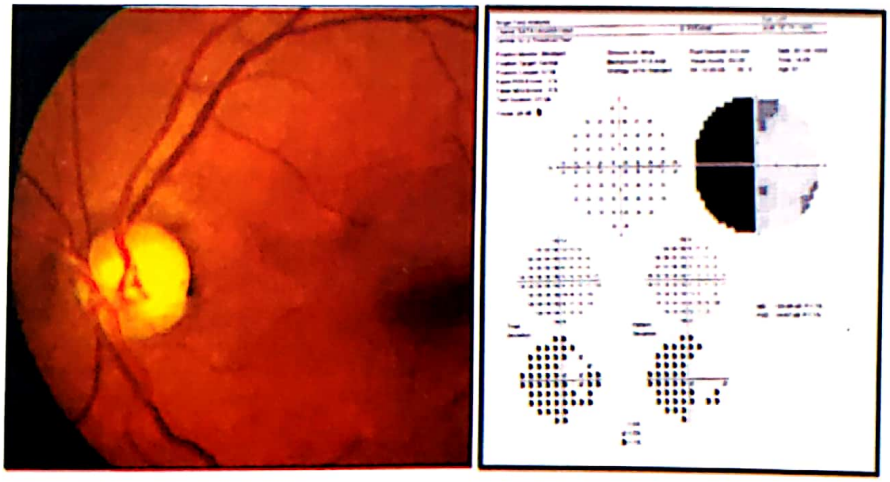

Figure: 11 – Pale Disc with vertical Hemifield defect (Pitutary Adenoma)

Figure: 12– Morning Glory Syndrome

DISC FIELDS CORELATION -It is very important to come to the diagnosis of glaucoma. There are various disc conditions which can mimic glauco-matous discs like large deep physiological cup, post AION disc and many other conditions which can be ruled out by meticulous and careful disc evaluation with correlating field defects to differentiate glaucoma and non glauco-matous conditions.

MYOPIA AND GLAUCOMA- It is difficult to assess the glaucomatous changes in the high myopia. These patients usually have significantly shallower disc cupping which may be due to low intraocular pressure. Large parapapillary atrophy in highly myopic eyes with glaucoma is mainly due to myopic stretching of the globe. We should have a high index of suspicion while looking myopic disc for glaucoma.

DIFFRENTIAL DIAGNOSIS- In contrast to glauco-matous optic neuropathy, non-glaucomatous optic nerve damage is usually not associated with a loss of neuroretinal rim such disc have more pallor in comparison to cup. They can be (1) Congenital (2) Pits or colobomas (3)Temporal arteritis (4)Intracranial neoplasm (5)Methanol poisoning (5)Luetic, Kjers dominant optic atrophy

JOSTS RULES

1. All discs have glaucomatous changes
2. All glaucoma's have RNFL defects
3. All glaucoma's have disc hemorrhage
4. All mopes have glaucoma

CONCLUSION-Early diagnosis of glaucoma is important to initiate treatment and prevent progression of disease. Careful meticulous disc examination with correlating findings and high index of suspicion makes diagnosis of early glaucoma easy.

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A CASE OF FRONTAL SINUS MUCOPYELOCOEL WITH ORBITAL AND INTRACRANIAL EXTENSION

Dr Saroj Gupta- (Professor People's College Of Medical Sciences & Research Centre, Bhopal)

ABSTRACT: This case report discusses issues related to a 52-year-old lady with non-axial proptosis, diplopia and diminution of vision, due to a mass lesion in upper medial quadrant of the orbit. CT scan revealed a well defined lesion in frontal sinus area with orbital and intracranial extension. On exploring it was found to be a muco-pyelocele of the frontal sinus. Surgical excision was done by external approach. The symptoms and signs resolved completely within a week. Frontal sinus mucopyelocele are benign and curable, early recognition and management of them is of paramount importance, because they can expand and cause orbital as well as intracranial complications.

KEYWORDS : Mucocele, mucopyelocele, paranasal sinuses, visual loss, proptosis.

INTRODUCTION: Mucopyelocele is a chronic, expanding, mucosa-lined lesion of the paranasal sinus with retention of mucous and pus. Though benign, they have a tendency to expand by eroding the surrounding bony walls that displaces and destroys structures by pressure and bony resorption. 1 Symptoms and signs of frontal mucopyelocele include pain, swelling, proptosis, diplopia and loss of vision. Intracranial extension may lead to meningitis, meningoencephalitis, pneumo-cephalus, and brain abscess. The treatment is surgery by external open approach.

CASE REPORT: A 52 year old lady presented with a progressive bulging of right eye with deterioration of vision since three months. The globe was pushed forewords, downwards and outwards by a nontender diffuse, non pulsatile mass in upper medial quadrant of the orbit. (Fig-1).On examination, vision in right eye was 20/200, whereas in left eye it was 20/20.Anterior rhinoscopic examination was normal. There was no history of headache, epistaxis, trauma or seizures.

Computed tomography of orbit and sinuses revealed large a well defined mass in basifrontal area, isodense, non-enhancing, measuring 3.6 x 3.5 x 2.4 cm with bony erosions. It extended into anterior cranial fossa and was in direct contact with the meninges. It also eroded the superomedial wall of the right orbit and displaced the eyeball down wards and outwards. There was no significant enhancement of the lesion after contrast administration. No calcification was noted. (Fig-2) Fine needle aspiration cytology was inconclusive. Based on clinical and radiological findings, a provisional diagnosis of mucocele of frontal sinus with orbital and intracranial l extension was made. Differential diagnosis included - dermoid cyst, histocytoma, fungal or tubercular infection or a neoplastic lesion.

The patient was operated by a team of Neurosurgeon, an ENT surgeon and an ophthalmic surgeon. Incision was given just below the medial half of right eyebrow. On exploring it was found to be mucopyelocele of the frontal sinus. Thick mucopurulent discharge was sucked out and mucocele was completely excised. Dura could be seen through the defect in the posterior wall of the frontal sinus and was found to be intact. The skin flap was sutured. Post operative period was uneventful. Proptosis and globe displacement resolved completely within a week. (Fig-3) Vision also improved to20/20 in right eye. She was discharged after two weeks.

DISCUSSION: Mucocele of para nasal sinuses are caused by obstruction of sinus ostium. The closure of ostium may be secondary to infection, allergy, and trauma, benign or malignant neoplasm. 2 The incidence of mucocele of sinuses causing unilateral proptosis has been variable depending upon the special interest of the investigators. Frontal sinus mucocele are the most common (65%) among the paranasal sinus mucoceles. 3 There is a greater risk of optic neuropathy and visual loss with sphenoid sinus and Onodi cell mucoceles because of their proximity to the optic nerve. However, fronto-ethmoidal mucoceles are not benign and may compromise vision, especially if a posterior ethmoid sinus is involved, or if treatment is delayed and secondary infection has ensued to form a pyelocele. 4 Therefore management of paranasal mucoceles requires early diagnosis, prompt treatment and multidisciplinary co operation.

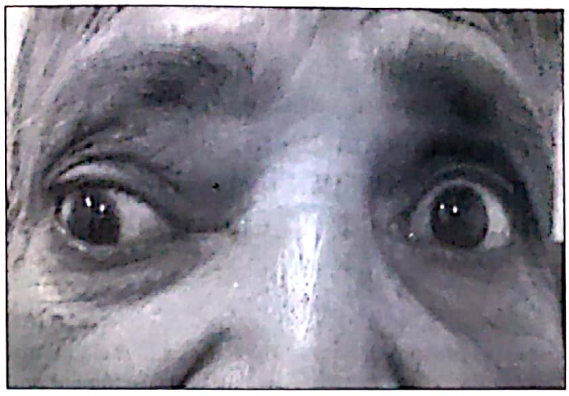

Fig.:1 - Clinical photograph of the patient showing proptosis with lateral displacement of eye ball on right side.

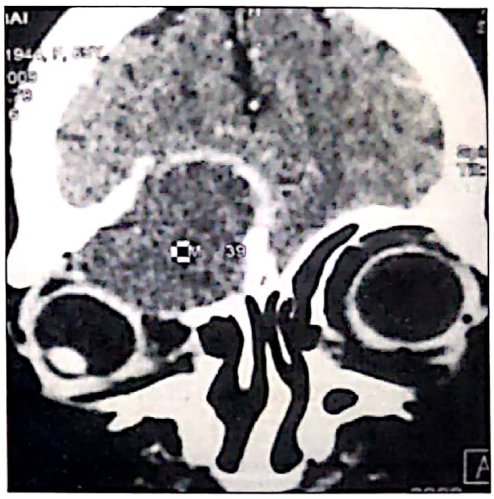

Fig.: 2 - CTscan orbit showing a mass lesion on right side with extension into the orbit as well as in the cranial cavity displacing the eyeball downwards and laterall

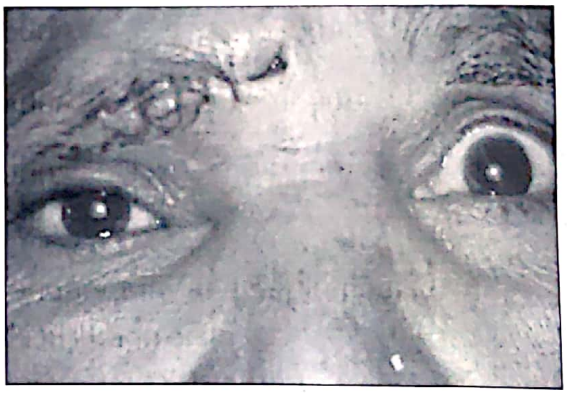

Fig : 3 - Clinical photograph of the patient showing complete resolution of proptosis after surgical treatment.

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IRIDOTOMY IN PIGMENTARY GLAUCOMA - ASOCT PERSPECTIVE"

Dr. Prakash Agrawal - Assistant Professor, People's College of Medical Sciences Research Centre, Bhopal

A 25 year old male patient presented to ophthalmology department of our hospital with decrease in vision of right eye since 6 months. On examination vision of right eye was hand movement close to face and inaccurate projection of rays in two quadrants. Vision of left eye was 6/36 with accurate projection of rays.

The anterior chamber was deep. Pupillary reaction revealed a relative afferent pupillary defect in the right eye. Goldman Applanation tonometry revealed intraocular pressure of 27 mm of Hg OD and 22 mm of in Hg OS. Fundus examination revealed - glaucomatous optic atrophy OD (Figure 1) and near total optic disc cupping OS (Figure 2). Gonioscopy revealed pigment dispersion in both the eyes OD>OS and open angles OU (Figure 3,4). Detailed examination revealed pigment dispersion over the endothelium. Configuration of the iris was concave with atrophy of the peripheral iris as compared with central portion of iris with hetero-chromia iridum (Figure5).

On retrospective questioning there was no history of trauma or intraocular surgery. There was no history of chronic medication or significant medical illness. There was no family history of glaucoma. Optical coherence tomography of the angles revealed concave iris configuration with extensive irido-lenticular touch and reverse pupillary block in both eyes. Disc photography was done to document the findings. Central corneal pachymetry using the OCT revealed 533 microns OD and 534 microns OS. Right eye visual field assessment could not be done due to poor vision. Left eye visual field assessment was not reliable due to high loss of fixation. Confrontation perimetry revealed gross decrease in visual field.

The patient had concave iris configuration which was documented clearly on Anterior segment Optical Coherence Tomography (AS-OCT, Topkon, Japan). Based on the deposition of pigment at the angles and typical concave iris configuration, a diagnosis of reverse pupillary block and pigmentary glaucoma was made (Figure6,7). The patient underwent a YAG laser iridotomy in both eyes and post iridotomy, the flattening of iris was also documented (Figure8,9) . The patient was put anti-glaucoma medication after iridotomy to prevent secondary rise of intraocular pressure (IOP). In view of advance glaucomatous cupping of both eyes; the target IOP of 10-12 was set for the patient. The patient was started on topical bimatoprost (Lumigan 0.01%, Allergan, USA) and topical combination of timolol (o.5%) and Brimonidine (0.15%) (Combigan, Allergan , USA). The patient responded well and tolerated the medication without significant side effect. The IOP was lowered to 11 in right eye and 12 in left eye at 3 month follow up.

Discussion: The relationship of pigment and glaucoma was first by von Hippel in the 20th century.1 The modern concept of pigmentary glaucoma was conceived by Sugar in 1940 when he described pigment dispersion and glaucoma in a 29 year old man.2 The term "Pigment glaucoma" was described in a series published by Sugar and Barbour in 1949.3 Classically this type of glaucoma was described in young myopic males with pigment deposition at the angles and corneal endothelium. Mapstone4 described the pathophysiology of pigment release and its association with phenyle-phrine. Bick et 5 all described the atrophy of iris pigment epithelium and iris trans-illumination defects. The pigment was postulated to block the filtering trabecular meshwork leading to decreased outflow and rise in intraocular pressure.6-10

Harold Scheie et al11 described a large series of 407 patients (799 eyes) with pigmentary glaucoma among 9200 glaucoma patients over 30 years. The study described the epidemiology, clinical characteristics and long term prognosis of pigmentary glaucoma.

PHOTOGRAPHS OF IRIDOTOMY IN PIGMENTARY GLAUCOMA - ASOCT PERSPECTIVE"

Figure - 1

Figure - 2

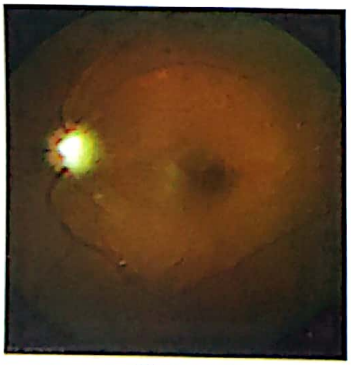


Figure - 3

Figure - 4

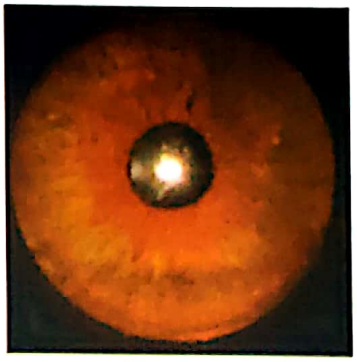


Figure - 5

Figure 6: Pre YAG PI – Concave Iris OD

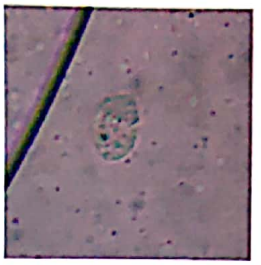
Figure 7: Pre YAG PI – Concave Iris OS

Figure 8: Post YAG PI – Normal Iris OD

Figure 9: Post YAG PI – Normal Iris OS

The Ophthalmic Quiz -1

Send your answers by post to Editor BDOS SCIENTIFIC HIGHLIGHTS Or email to sideyehosp45@yahoo.co.in Name of lucky BDOS member with all correct answers will be published in next issue.



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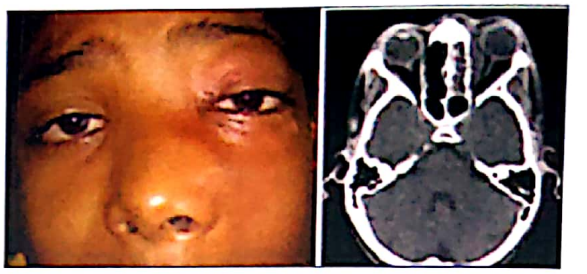

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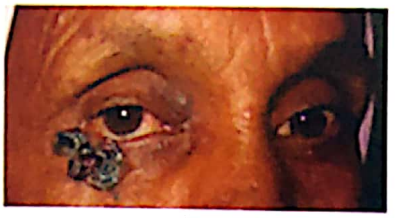

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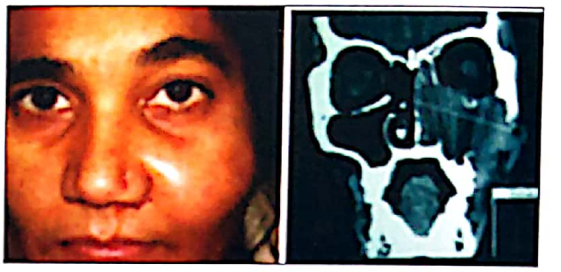

D

Think it over..... Till next issue

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Our case was unusual since the patient is a 25 year old male with pigmentary glaucoma. Our patient is relatively young for presentation with advance disease12; however pigmentary dispersion has been described in as young as 14 year old patients.11The patient presented with relatively low intraocular pressure of 22 and 27 which is uncommon in pigmentary dispersion syndrome. The intraocular pressure in pigmentary glaucoma is typically higher 35-40 mm Hg and difficult to treat medically.12 The patient presented with bilateral advance glaucomatous cupping, which is however possible due to lack of health awareness and poor access to quality medical care.

The differential diagnosis which could be possible in such a scenario was juvenile open angle glaucoma (JOAG). However points against JOAG were concave iris configuration, atrophy of peripheral iris, pigment dispersion at the angles. Secondary glaucoma was ruled out in view of no history of trauma, medical illness or chronic medication. There were no ophthalmic signs of uveitis, hyphaema, trauma or any other ocular disease giving rise to secondary elevation of IOP.

Thus our patient presented as 25 old male with bilateral rise of IOP, concave iris configuration, peripheral iris atrophy with gonioscopic evidence of pigment dispersion and advance glaucomatous cupping. Such advance optic nerve damage with relatively lower values of IOP (22 and 27 mm Hg) at relatively younger age presentation has not been reported in literature in pigment dispersion glaucoma.

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SILICONE SLING FRONTALIS SUSPENSION FOR CORRECTION OF CONGENITAL PTOSIS

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Abstract- There are many techniques for treating congenital ptosis. A new surgical technique for ptosis with poor levator function in which Silicone Suspension set is used in frontalis sling procedure is described in a 12 year old female child with unilateral congenital blepharoptosis. This procedure requires less surgical time, provides good cosmesis and early recovery.

Introduction- Congenital blepharoptosis results from a developmental dystrophy of the levator muscle of unknown aetiology. Frontalis muscle suspension is the gold standard for the treatment of congenital ptosis with poor levator function . It creates a linkage between the frontalis muscle and the tarsal plate of the upper eyelid. There have been various modifications of performing the sling procedure in the recent past . A number of sling materials namely autologous fascia lata, preserved preserved fascia lata, non absorbable suture material, mersilene mesh etc have been tried . In this patient silicone frontalis sling was used for correction of ptosis with good result.

Case Report: A 12 year old female child presented with severe congenital ptosis with amblyopia in left eye (Fig.I). Her vision in right eye was 20/20 whereas in left eye it was 20/200. She was operated under general anesthesia. The pentagon shape was marked over the upper eye lid skin with a marker pen. The amount of upper lid elevation needed was decided on table. Two incisions were marked just above the lash line each about 3mm long. The incisions were centered approximately 6mm nasal and temporal to the point directly above the centre of cornea. Three eyebrow incisions were given. The central stab incision of about 2mm was put 5mm above the eye brow. The medial and lateral brow incisions were given just above the eyebrow, medial and lateral to their respective lid incisions. Sterile silicone frontal suspension set was then taken. It has a long silicone tube with stainless hollow rods on both ends with moderately sharp ends. The silicone sling of the set measures about 23.5cm and the rod measures about 6.3cm. One end of the tube was advanced through the supra eyebrow stab incision in the muscle plane. Then it was guided through the lateral eyebrow and eyelid incisions. Once the lateral eyelid incision was reached, the needle was turned horizontally to pass through the medial lid incision and then to nasal eyebrow incision. Care was taken to maintain the muscle plane all throughout the procedure.

Finally needle was brought back to the supra eyebrow stab incision and exteriorized. Lid margin height was adjusted according to the amount of correction (Fig.II). The two ends of the silicone band were tied, creating minimum 4 knots (Fig.III). The knots were buried below the subcutaneous layer.

A stay suture was placed with 6/0 vicryl suture to secure the knot in position. The single supra eye bow stab incision was closed with silk suture. Mild pressure bandage was done with antibiotic eye ointment for 24 hours. Lubricating eye drops and ointment were prescribed in post-operative period.

The patient was followed for one year. Good cosmetic correction was achieved (Fig.IV).

Discussion: The advantage of silicone frontalis sling is that it requires small skin incisions and less surgical time.

This technique can be performed in all eyes with ptosis and poor levator function, which necessitates frontalis sling. Autologus fascia lata has been proven to be the material of choice in sling surgery for ptosis. (Lee et al 2009; Leibovitch et al 2003) Some known complications of harvesting fascia lata include an unsightly scar in the thigh region, hematoma formation, keloid formation and herniation of the muscle belly. (Grover et al 2005)

The silicone material for frontalis sling has been tried successfully (Carter et al 1996; Morris et al 2008). It

has many advantages. It cuts down the valuable operating time.Complications associated with harvesting the fascia lata were not observed. It has greater elasticity compared to fascia lata. Post operatively silicone band can be easily adjusted if there is under or over correction of ptosis. It is easily available and relatively cheaper priced thus making it one of the more economical options for the patient. Lee et al (2009) compared the results of silicone band with preserved fascia lata for frontalis sling operation in congenital ptosis and found better cosmetic results and lower recurrence rate with silicon band. Simple learning curve, good cosmesis, less number of sutures with better functional results, while retaining the usual advantage of standard sling procedure are the unique feature of this technique.

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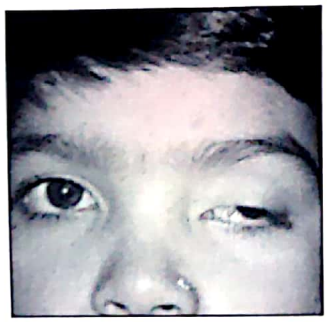

Fig.I: Clinical photograph of the patient showing severe ptosis in left eye

Fig. III: The two ends of the silicone band are tied, creating a simple square knot.

Fig. II: The silicone sling is passed from the temporal eyebrow incision to the middle supra brow incision.

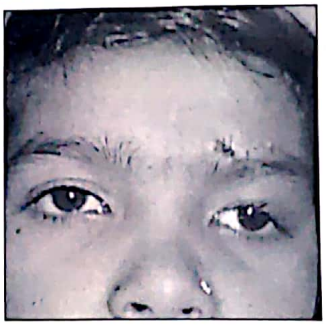

Fig. IV: Post operative photograph of the patient showing ptosis correction in left eye.

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