

Research Article

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[A study to correlate the central corneal thickness to the severity of diabetic retinopathy and HbA1c levels in type 2 diabetes mellitus](#)

Background: Diabetic retinopathy (DR) is one of the most common causes of preventable blindness. Patients with Diabetes Mellitus (DM) develop not only DR but also corneal endothelial damage leading to anatomical and physiological changes in cornea. Central corneal thickness (CCT) is a key parameter of refractive surgery and Intraocular pressure (IOP) estimation. The role of CCT and higher glycemic index in DR needs to be researched upon.

Objectives: To identify the corneal endothelial morphology in patients with type 2 DM, to measure the Central Corneal thickness (CCT) in patients with type 2 Diabetes Mellitus, to assess the relationship of CCT with HbA1C levels in the study group and to correlate the CCT with the severity of Diabetic retinopathy in the study group.

Methods: A cross-sectional observational study was conducted between January 2018 and June 2019 in Vydehi Institute of Medical Sciences and Research Centre, Bangalore. The study included 100 subjects with type 2 DM for 5 years or more. Patients with comorbidities that may affect the severity of DR or alter CCT and other corneal endothelial parameters such as glaucoma, previous ocular surgery or trauma, corneal degenerations and dystrophies, chronic kidney disease and Hypertension were excluded. DR was assessed by dilated funduscopy, fundus photography and optical coherence imaging of the macula and graded as per the Early Treatment of Diabetic Retinopathy Study (ETDRS) classification. CCT and other corneal endothelial parameters were measured through specular microscopy. Relevant blood investigations including blood sugar levels were done for all patients.

Statistical analysis: Relationship between CCT and grades of DR and HbA1c levels were established using the Chi-Square test. The level of significance was set at $p < 0.05$.

Results: The mean CCT in patients with no diabetic retinopathy, very mild and mild non-proliferative diabetic retinopathy (NPDR), moderate NPDR, severe and very severe NPDR and PDR was $526.62 \pm 8.084 \mu\text{m}$, $542.07 \pm 8.713 \mu\text{m}$, $562.16 \pm 8.255 \mu\text{m}$, $582.79 \pm 7.368 \mu\text{m}$ and $610.43 \pm 18.256 \mu\text{m}$ respectively. Analysis of the relationship between CCT and severity of DR showed a statistically significant positive correlation between the two parameters (Pearson $r = 0.933$, $p = 0.001$). Beyond this, a correlation was found between all the corneal endothelial parameters and severity of DR. Multivariate analysis showed that advanced DR was positively correlated with CV ($r = 0.917$) and CCT ($r = 0.933$); while it was negatively correlated with ECD ($r = -0.872$) and Hex ($r = -0.811$).

A statistically significant correlation was also found between CCT and HbA1c. Also increasing age, duration of DM and higher glycemic index were positively correlated with severity of DR.

Conclusion: This study, by demonstrating a strong correlation between the central corneal thickness to the severity of DR and HbA1c levels emphasizes the importance of evaluation of corneal endothelial morphology in the early screening and diagnosis of microvascular complications of DM.

Case Report

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[Ocular manifestations in a case of progeroid syndrome](#)

Progeria syndromes are very rare genetic diseases characterized by premature aging changes. There are several phenotypes and variables noted in literature in some cases difficult to specifically classify a specific syndrome. It occurs due to mutation in DNA repair genes. The most common ocular findings are loss of eyebrow and eyelashes, brow ptosis, lid margin changes, entropion, Meibomian gland dysfunction, severe dry eye, corneal opacity, cataract, poor mydriasis, and rod-cone dystrophy. We report this case with all the above ocular manifestations in 19year old teenager with additional finding being retinal detachment.

Case Report

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[Bilateral corneal ulcer and hypovitaminosis A: a case report](#)

Vitamin A is a fat-soluble discovered in 1913. Hypo-vitaminosis A can cause blindness by various mechanisms. The aim of this case report is to emphasize the severity of Vitamin A deficiency and its local consequences on the eyes causing corneal ulcerations, abscess and even blindness.

Case Report **Published Date:-2021-09-13 00:00:00**

[A case report of Multi System Atrophy \(MSA\) with cross over features of Progressive Supranuclear Palsy \(PSP\)](#)

We describe an interesting case of Multi System Atrophy who had cross over features of progressive supranuclear palsy along with classical clinical findings which led to the diagnosis.

Research Article **Published Date:-2021-08-10 00:00:00**

[A rare presentation of orbital dermoid: A case study](#)

Introduction: A dermoid cyst is a developmental choristoma lined with epithelium and filled with keratinized material arising from ectodermal rests pinched off at suture lines. These are the most common orbital tumors in childhood. They are categorized into superficial and deep. Superficial orbital dermoid tumors usually occur in the area of the lateral brow adjacent to the frontozygomatic suture. Infrequently a tumor may be encountered in the medial canthal area [1], which is the second most common site of orbital dermoids. We report a case where a swelling presented in the medial canthal area without involving the lacrimal system.

Case report: A 43 year old lady presented with complaint of swelling near the (RE; Right eye) since 2 years duration. She presented with a solitary 1.5 cm x 1 cm ovoid, non-tender, non-pulsatile, firm, non-compressible mobile swelling with smooth surface over the medial canthus of right eye. (MRI; Magnetic Resonance Imaging) brain and orbit showed right periorbital extraconal lesion and the (FNAC; Fine Needle Aspiration Cytology) suggested of Dermoid Cyst. RE canthal dermoid cyst excision was done under Local Anesthesia.

Conclusion: Complete surgical excision in to be treatment of choice for dermoids. Since medial canthal mass can involve the lacrimal system, it becomes necessary to perform preoperative assessments using (CT; Computed Tomography), MRI or dacryocystography while planning the surgical approach. Silicone intubation at the beginning of the surgery is an easy and effective way of identifying canaliculi and of preventing canalicular laceration during dermoid excision if the lacrimal system is found to be involved.

Research Article **Published Date:-2021-08-05 00:00:00**

[A comparative study of post-operative astigmatism in superior versus superotemporal scleral incisions in manual small incision cataract surgery in a tertiary care hospital](#)

Background: In developing countries, manual small incision cataract surgery is a better alternative and less expensive in comparison to phacoemulsification and thus the incision is an important factor causing high rates of postoperative astigmatism resulting into poor visual outcome. Thus, modifications to the site of the incision is needed to reduce the pre-existing astigmatism and also to prevent postoperative astigmatism. Modification to superotemporal incision relieves pre-existing astigmatism majorly due to its characteristic of neutralizing against-the-rule astigmatism, which is more prevalent among elderly population and thus improves the visual outcome.

Aims: To study the incidence, amount and type of surgically induced astigmatism in superior and superotemporal scleral incision in manual SICS.

Methodology: It is a randomized, comparative clinical study done on 100 patients attending the OPD of Ophthalmology at a tertiary care hospital, with senile cataract within a period of one year and underwent manual SICS. 50 of them chosen randomly for superior incision and rest 50 with superotemporal incision. MSICS with PCIOL implantation were performed through unsutured 6.5 mm scleral incision in all. Patients were examined post-operatively on 1st day, 7th day, 2nd week and 4th week and astigmatism was evaluated and compared in both groups.

Results: It is seen that on postoperative follow up on 4th week, 77.78% of the patients with ATR astigmatism who underwent superior incision had increased astigmatism whereas, only 13.63% of the patients with ATR astigmatism who underwent supero-temporal incision, had increased astigmatism but 81.82% had decreased ATR astigmatism. However, 77.78% of the patients with preoperative WTR astigmatism who underwent supero-temporal incision, had increased astigmatism, whereas 44.45% of the patients with WTR astigmatism preoperatively, had increased astigmatism in contrast to 50% had decreased amount of astigmatism. It is also seen that the supero-temporal incision group had more number of patients (78%) with visual acuity better than 6/9 at 4th postoperative week than superior incision group (42%).

Conclusion: This study concludes that superior incision cause more ATR astigmatism postoperatively whereas superotemporal incision causes lower magnitude of WTR astigmatism, which is advantageous for the elderly. Besides superotemporal incision provides better and early visual acuity postoperatively.
