

Special Session : Ocular Leprosy

SPL-4

Ocular Surface Disorders in Leprosy

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Leprosy is a well known of cause ocular morbidity, some of which could be potentially sight-threatening. The problems in the eye are exacerbated due to disabilities in the upper and lower limbs. It is important to identify ocular problems as soon as possible, and rectify them since; patients with anesthetic limbs need to have good eyesight to prevent further disabilities. A total of 57 patients, 46 males and 11 females were studied using 5 tests for detection of ocular surface disorders. Mean age (years) was 38 for males and 47 for females. Average duration of leprosy was 7 years and 90% were MB. 20% were on MDT. 80% of both males and females had normal visual acuity (6/6 to 6/18). 21% of the patients were on MDT. Ocular surface disorders were assessed through multiple methods and observations: Blink Rate, Sensation, OSD Schirmer I & II, OSD BUT, and Rose Bengal Stain. The tests were done for both eyes. The findings are described and correlated among the various tests. Consensus was studied in relation to demographic and leprosy characteristics of the patients, **Key words** : ocular surface disorders, ocular disorders in leprosy, eye involvement in leprosy.

SPL-5

Patients Presenting With Uveitis and Scleritis After Being Released From Treatment For Hansen's Disease

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34 patients who were released from treatment (RFT) for Hansen's disease have been undergoing treatment for uveitis and scleritis at The Leprosy Mission Kothara Community Hospital from 2000 to 2007. 94% of the patients had been treated for multibacillary type of Hansen's disease. 2 patients had uveitis and scleritis documented while under treatment which continued after RFT. In the remaining 32 patients eye disease occurred anywhere between 7 months to 30 years after RFT. 32% gave a definite history of similar eye disease while under treatment. 2 patients had concurrent lepra reactions with their eye complaints and 1 patient was detected as a relapsed case because of the eye disease and started on treatment. 73% of patients had been treated for more than 1 episode. 61 % were between 25 to 50 years of age and 65% had both eyes involved. This paper highlights the need for awareness among health workers providing care to persons cured of Hansen's disease that eye complications can occur repeatedly in certain persons after RFT that if left untreated may lead to permanent visual disability. **Key words** : visual outcomes, cataract surgery in leprosy.

SPL-6

Mycobacterium leprae In Newly Diagnosed Multibacillary Leprosy; Does Content Affect Evolution of Ocular Complications During and After Multi-Drug Therapy?

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Introduction : Ocular complications are known to occur more in multi-bacillary (MB) than in pauci-bacillary leprosy. **Purpose**: Does bacterial content at diagnosis affect magnitude and severity of ocular complications in MB patients? **Methodology** : A cohort of newly diagnosed MB patients, whose skin smears were recorded at diagnosis, were followed throughout 2 years of MDT and for five years thereafter with ocular examinations every 6 months. Evolution of various ocular complications were recorded and analyzed against bacterial content at diagnosis. **Results** : Beading corneal nerves during MDT were associated with smear bacterial index of 3.00+ or above (HR 4.218 95% CI 1.282, 13.877 p=0.018) and corneal opacities during MDT were observed less in patients who were smear positive (HR 0.379 95% CI 0.178, 0.804 p=0.011). In the years after completion of MDT, incident iris atrophy was associated with higher bacterial indices at diagnosis (HR 3.501 (95% CI 1.326, 9.245) p=0.011). Other leprosy and ocular characteristics were distributed equally among smear positive and smear negative patients. **Conclusion** : High bacterial content is associated with development of iris atrophy and beaded corneal nerves and possibly affords protection against immune mediated corneal opacities.

SPL-7

A Study on Ocular Morbidity in Leprosy Patients With Lagophthalmos

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Introduction : Lagophthalmos occurs in about 20% of all leprosy patients, both multibacillary and paucibacillary leprosy. The main complications of lagophthalmos are related to the incomplete closure of the eyelids and thereby to the continuous exposure of the eyes to exposure. It is essential to identify such morbidity early and treat promptly. **Methods :** A cross-sectional study of all leprosy patients with lid lag presenting at our hospital during 2007 was studied in detail. **Results :** Altogether 44 patients, 37 male and 7 female, were included so far. 5 were still on MDT, while a majority was RFT. There was only 1 PB. About a third had normal visual acuity, but 70% had lost corneal sensation, 23% had iridocyclitis, and nearly 50% had cataract. Nearly 60% had redness in the eye, for 80% it was irritable, 95% had watering of the eye, and 77% has exposure keratopathy. The analyses were done by various demographic and clinical details of leprosy, disabilities and the implications of these findings discussed. **Conclusion :** It is concluded that leprosy patients with lagophthalmos need constant and periodic eye check up to prevent ocular morbidity and further complications. **Key words :** lid lag in leprosy, ocular morbidity.

SPL-8

Visual Outcomes of Cataract Surgery in Patients with Hansen's Disease

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585 eyes of 451 patients with Hansen's disease who underwent cataract surgery with intraocular lens implantation at TLM Kothara Community Hospital were followed up for a period of 1 to 3 years to observe the visual outcomes in the long term. The outcomes were graded 'good' (VA 6/6- 6/18), 'borderline' (VA 6/24 – 6/60) and 'poor' (VA <6/60- NPL). The study compared the visual outcomes in the following groups of patients 1) multibacillary 473 (MB) and paucibacillary 112 (PB) 2) bacterial index (BI) positive and negative at time of surgery 3) disease active (under Multi Drug Therapy) and inactive (Released From Treatment) at time of surgery 4) presence and absence of leprosy related complications at time of surgery (lepra reactions, ulcer) and 5) presence and absence of pre- existing leprosy related ocular disease (uveitis, scleritis, lagophthalmos). Overall long term visual outcomes were good in 73.3% of patients, borderline in 17.8% and poor in 8.9%. The study observed no appreciable difference in visual outcomes in the MB/PB groups. Groups with BI positive, active disease, leprosy related complications like reactions and ulcers, and leprosy related ocular disease had a slightly higher percentage of patients with poor visual outcomes than their comparison groups. **Key words :** visual outcomes, cataract surgery in leprosy.

SPL-9

Intraoperative and Postoperative Complications Following Cataract Surgery in Patients With Hansen's Disease

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Patient records of 1175 eyes of 893 patients with Hansen's disease who underwent cataract surgery with intraocular lens implantation at TLM Kothara Community Hospital between 1995 and 2006 were examined to study the intra-operative and postoperative complications, their management and the visual outcomes for these eyes at last follow up. The study also sought to correlate the intra and post operative complications with certain disease specifics like bacterial index (BI) positive at time of surgery, disease active (under Multi drug therapy) at time of surgery, presence of leprosy related complications at time of surgery (lepra reactions, ulcer) and presence of pre- existing leprosy related ocular disease (uveitis, scleritis, lagophthalmos). 3.1% of eyes had intra-operative complications which were posterior capsular tear with or without vitreous loss. 20.9 % of eyes had post operative complications which were mainly posterior capsular opacification, post operative uveitis and pupillary capture of the optic of the intraocular lens. Eyes with intra-operative and postoperative complications had 24% and 17% respectively of poor post operative visual outcomes (VA < 6/60-NPL) at last follow up. **Key words :** operative complications, cataract surgery, leprosy.

SPL-10**Extracapsular Cataract Surgery and Intraocular Lens Implantation in Leprosy and Non-Leprosy Patients : Visual Outcome and Complications**

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Aim : To compare the visual outcome and complications following ECCE cataract surgery and IOL implantation in a leprosy group to a group of non-leprosy patients. **Methods :** In this prospective longitudinal study 93 non-selected leprosy patients and 86 age-matched non-leprosy patients underwent ECCE cataract surgery during a 4-year period. Fisher's test was used for statistical analysis of visual outcome and complications records. **Results :** At least 2 months after each surgery we found in the leprosy group 64.5% of the eyes with best-corrected visual acuity e" 20/40, 23.7% with 20/60 to 20/100 and 11.8% d" 20/200. In the non-leprosy group the best-corrected visual acuity was e" 20/40 in 75.6% of the eyes, 20/60 to 20/100 in 16.3% and d" 20/200 in 8.1%. In the leprosy group the complications were: IOL dislocation (6.5%), IOL decentration (11.8%), inflammation and synechiae (15.1%), debris on IOL surface (19.4%), sphincter tears (30.1%) and capsular opacification (34.4%). In the non-leprosy group the complications were: IOL debris and IOL dislocation (1.2%), sphincter tears (2.3%), synechiae (5.8%) and capsular opacification (24.4%). **Conclusions :** Visual outcome in the leprosy group was similar to the non-leprosy group (p=0.273). Sphincter tears, IOL debris, inflammation, IOL decentration (p= 0.0001) and synechiae (p=0.045) were significantly more frequent in the leprosy group compared to the non-leprosy group. **Key Words :** cataract surgery, ocular leprosy.

SPL-11**Phacoemulsification Cataract Surgery and Intraocular Lens Implantation in Leprosy and Non-Leprosy Patients : Visual Outcome and Complications**

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Aim : To compare the visual outcome and complications following PHACO cataract surgery and IOL implantation in a leprosy group to a group of non-leprosy patients. **Methods:** In this prospective longitudinal study 60 non-selected leprosy patients and 60 age-matched non-leprosy patients underwent PHACO cataract surgery during a 3-year period. Fisher's test was used for statistical analysis of visual outcome and complications records. **Results :** At least 2 months after each surgery we found in the leprosy group 81.7% of the eyes with best-corrected visual acuity e" 20/40, 10.0% with 20/60 to 20/100 and 8.3% d" 20/200. In the non-leprosy group the best-corrected visual acuity was e" 20/40 in 81.7% of the eyes, 20/60 to 20/100 in 15.0% and d" 20/200 in 3.3%. In the leprosy group the complications were: IOL dislocation and inflammation (3.3%), debris on IOL surface (5.0%), IOL decentration (10.0%), capsular opacification and synechiae (16.7%) and sphincter tears (18.3%). In the non-leprosy group the complications were: synechiae, IOL debris, IOL decentration and sphincter tears (1.7%), inflammation (8.3%) and capsular opacification (13.3%). **Conclusions:** Visual outcome in the leprosy group was similar to the non-leprosy group (p=0.435). Synechiae (p=0.008) and sphincter tears (p=0.004) were significantly more frequent in the leprosy group compared to the non-leprosy group. **Key Words :** cataract surgery, ocular leprosy, IOL implantation

SPL-12**Visual Outcome of Intraocular Lens Implantation Surgery on Patients With Type II Reaction**

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Introduction : patients with Type II Lepra reaction on long-term steroids are at an increased risk of developing steroid induced cataract. Complicated cataract may also be seen due to iridocyclitis. We sought to determine the visual outcome of leprosy patients with cataract who had been on long-term steroids and thalidomide therapy for type II reaction. **Methods :** 23 eyes of leprosy patients with type II reaction and on long term steroids with thalidomide which were operated of cataract from 2003-2007 were studied. The same technique (ECCE with PCIOL implantation) was employed in all patients and the parameters studied were BI, duration and dose of prednisolone, and associated thalidomide therapy. The visual outcomes were recorded at 1st postoperative day, then at 2 weeks and finally at 6 to 8 weeks. **Results :** Among the 23 eyes which were taken in this study, 21 eyes (91%) had good visual outcome (VA 6/6 – 6/18), 1 (4.5%) eye had borderline visual outcome VA 6/24 – 6/18), 1 (4.5%) eye had poor visual outcome (VA < 6/60). One eye developed severe postoperative iridocyclitis. No postoperative infection was seen in any patient. **Conclusion :** Neither BI, nor the duration or dose of prednisolone, or additional thalidomide therapy had any effect on the visual outcomes of these patients. Intraocular lens implant surgery can be safely done in leprosy patients with type II reaction on high dose steroids with thalidomide. **Key words :** intraocular lens, type II reaction.

Profile of Patients with Hansen's Disease Who Underwent Cataract Surgery at Kothara Community Hospital

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Patient records of 893 patients (1175 eyes) with Hansen's disease who underwent cataract surgery with intraocular lens implantation at TLM Kothara Community Hospital between 1995 and 2006 were examined to study the profile of persons who came to the hospital for cataract surgery. Patients' profile was based on age groups, gender, occupation, disease type and classification, treatment status, leprosy related complications, etiology of cataract, associated eye disease and pre operative visual acuity. The study also sought to determine factors that might influence acceptance for cataract surgery in a hospital situation. 62.4% of patients were males, 87% of patients were 50 years and above and 34.2% of patients were coming for surgery on the second eye. Patients under treatment for leprosy or its related complications at the hospital had their surgery at an earlier stage (before severe visual impairment) than those who were not under direct medical care. This was due to earlier examination, diagnosis and surgery due the availability of ophthalmic services at the same hospital. **Key words:** cataract surgery, leprosy.

Loss of Facial Sensation in Leprous and Non-Leprous Women

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Purpose was to ascertain the number of leprosy and non-leprosy women developing loss of facial sensation following treatment for leprosy in a cohort study (1975-2003). 79 leprosy women: LL (24), BL(27) and BT(28) and 18 non-leprosy women (NL) had facial graded sensory skin test (FaSTG) using Semmes-Weinstein monofilaments. 12 areas, innervated by different nerves, were tested on each side. Subjects living in an area with low leprosy endemicity could all feel the 0.05 g filament, the lowest value used and this was considered upper limit of normal. Sensory loss was graded mild (0.2–4.0 g), moderate (10–20 g) and severe (50–300g). 43/79 women with leprosy had impaired FaSTG: LL (63%), BL(59%) and BT (43%) while NL had 17%. Involvement of the ophthalmic division was: LL (58%), BL (56%), BT (43%) and NL (17%). Loss of FaSTG and other leprosy damage in NL was associated with new leprosy. The degree of sensory loss was highest in BL. Three women with BL or LL were blind and a fourth had corneal ulceration. This study highlights the need to test "cured" leprosy patients and family contacts to detect sensory loss and minimise late eye damage. **Keywords :** Leprosy, women, facial sensation, Ethiopia

Epidemiological Survey on Uvea Disease in Leprosy

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Objective : To determine the prevalence and characteristics of the uvea disease in leprosy. **Method :** One thousand and forty-five cured and active cases of leprosy in Taixing, Jiangsu were checked by specially trained ophthalmologists. **Results :** Uvea disease caused by direct invasion of *M. leprae*, type-a! reaction, and secondary corneal disorders were found in 7.85% of the all investigated cases. The prevalence rate of the disease was found significantly higher in active cases (25%), multi-bacillary cases (24.27%) and those with long duration of the disease (38.93%). It was characterized by granulomatous iridocyclitis, with presenting of redness of the ciliary body (14.73%), irregular pupil (48.06%), diminished light reaction (45.74%), irispsterior synechiae (35.66%), small pupil (28.68%), blocked pupil (19.38%), synechia iridis anterior (17.83%), shrivel uvea (17.05%), depigmentation (15.5%), and iridoleptynsis (14.73%). Secondary cataract was found in 81.54% of those with chronic iridocyclitis, of which 60% of reduced vision, 40.24% blindness, and 52.73% curable blindness. **Conclusion :** The uvea disease in leprosy could be caused either by direct invasion of the *M. leprae*, type-a! reaction. It was commonly found in active cases, multi-bacillary cases and those with long duration of the disease. The clinical characteristic is granulomatous iridocyclitis, and most of them develop cataract and loss of vision. **Keywords :** leprosy; uvea disease.

Long-Term Results of Temporalis Muscle Transfer in Correction of Paralytic Lagophthalmos

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Objective : To compare the long-term results and possible complications of a modified temporalis muscle transfer (TMT) with the Johnson's procedure in correction of paralytic lagophthalmos. **Methods :** From September 1996 to March 2002, paralytic lagophthalmos due to leprosy in 167 patients were corrected with TMT. The 139 cases (201 to eyes including 77 unilateral and 62 bilateral) followed up 5 years after operation were analyzed. There were 89 males and 50 females with ages ranging from 18 to 67 years (54 years on average). The duration of lagophthalmos was 1.5-22.5 years with an average of 8.7 years. And 76 eyes were complicated with lower eyelid ectropion. 109 eyes were corrected with Johnson's procedure (Johnson's TMT group), 92 with the modified TMT procedure (modified TMT group). The modifications were as follows: 'S omitting the fascial strip in the lower eyelid to avoid postoperative ectropion. a\$fixing the fascial strip of the upper eyelid to the middle or inner margin of the tarsal plate depending on the degree of the lagophthalmos to avoid possible ptosis of the upper eyelid. **Results :** In Johnson's TMT group, the mean lid gap on light closure was reduced to 3 mm postoperatively from 8 mm preoperatively; and the mean lid gap on tight closure was reduced to 0.5 mm postoperatively from 6 mm preoperatively. The symptoms of redness (75.7%) and tearing (65.3%) disappeared or were improved postoperatively. However, ectropion and ptosis occurred in 44 eyes and 19 eyes respectively. The overall excellent and good rate was 57.8%. In the modified TMT group, the mean lid gap on light closure was reduced to 3 mm postoperatively from 9 mm preoperatively; and the mean lid gap on tight closure was reduced to 0.5 mm postoperatively from 7 mm preoperatively. The symptoms of redness (91%) and tearing (72%) disappeared or were improved postoperatively, and no ectropion or ptosis was found except three ectropion. The overall excellent and good rate was 87.5%, which was significantly higher than that of Johnson's group ($P < 0.01$). **Conclusion :** The modified TMT is an efficiency and simple procedure with very few complications, and thus is strongly recommended for use when TMT is an indication. **Keywords:** temporalis muscle transfer; lagophthalmos; leprosy.

Corrective Surgery for 25 Lagophthalmos Case in 23 Patients at a Stretch in Camp at RLTRI, Raipur in March 2005

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Introduction : Blindness is a common and disastrous complication of Leprosy. Coming on top of anaesthesia of hand and feet it is nothing less than a calamity. The procedure commonly used in surgical management of Lagophthalmos provides active correction of eyelid paralysis. We have used Johnson's procedure (modified by Dr. Vijay Kumar). In this procedure the grafted tendon passes in the upper lid along the upper margin of eyeball so that the tendon lies just above the tarsal plate. In an attempted closure of the eye lid the tendon/strip pushes the tarsal plate and the lid down like a shutter to close the eye. **Material And Method :** In the month of March 2005, RLTRI, Raipur conducted a camp for corrective surgery in Lagophthalmos cases. Out of 30 cases registered, 25 cases (two bilateral cases) in 23 patients were selected for surgery. These cases were operated simultaneously in two days. This is supposed to be the largest number of lagophthalmos cases operated in a single camp. Out of 25 cases majority were in the age group of 20 years to 40 years. The average duration of the lagophthalmos was 3 years. Two cases were above the age of 50 years and two young adults had bilateral lagophthalmos. Evaluation of operated cases of lagophthalmos was done by measuring the lid gap. The average lid gap in these patients was 8 mm. The maximum lid gap recorded was 10 mm. The palmaris longus graft was used in 21 cases and Tensor fascialata graft was used in 4 cases. The postoperative lid gap was measured at one-year follow up. In 23 cases the lid gap was zero and in 2 cases lid gap of 1 mm and 2 mm was seen. **Conclusion :** The aim of using Johnson's method (modified by Dr. Vijay Kumar) is to provide a better eyelid closing mechanism. This method takes less operative time; therefore it is suitable for the camps. The 25 corrective procedures in 23 patients for lagophthalmos in a stretch are supposed to be the largest number of cases during any RCS camp.