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Silicone punctal plugs for treatment of dry eye and other ocular surface disorders.

Purpose: To examine the efficacy, safety and retention rates of silicone punctal plugs for the treatment of dry eye disease and various ocular surface disorders.

Patients and Methods: Medical records of patients who underwent universal size silicone punctal plug insertion from November 2019 to January 2021 were retrospectively reviewed. After plug insertion, all patients had 6 months or more of follow-up. The clinical data collected were the sex and age of the patients, indications for plug insertion, Symptomatic Improvement (SI), initial versus replacement plug, spontaneous extrusion or removal of the plug, and percentage of complications. Furthermore, changes in objective ocular surface parameters were analyzed using the Corneal Fluorescein Staining (CFS) score, Schirmer's test and Tear break up time in plug-retaining patients at baseline and at six month follow-up. Plug retention rates were analyzed using Kaplan-Meier analyses.

Results: Silicone punctal plug was inserted in 164 eyes of 86 patients (62 women and 24 men). All insertions were in the lower punctum. Primary keratoconjunctivitis sicca syndrome was the most common indication for punctal plug treatment (102 eyes, 62.2%), followed by post Lasik group, recurrent corneal erosion, exposure keratoconjunctivitis and Sjogren's syndrome. The symptoms improved in 136 (83%) of 164 eyes at six month follow-up. The mean score of the fluorescein staining of the cornea was reduced from 2.9 ± 0.1 to 1.1 ± 0.1 with silicone punctal plug treatment at 6 ± 2 weeks follow-up and 0.6 ± 0.1 at 6 month follow up. The spontaneous total extrusion of silicone punctal plug occurred in 6 eyes (3.6%). The plug was removed in 9 eyes (5.5%) because of discomfort(8 eyes) and canaliculitis in one eye.

Conclusions: Punctal plug insertion is a simple, effective, safe and reversible method to treat aqueous tear deficiency and other ocular surface diseases. Complications were rare. Discomfort was the commonest reason for removal apart from a single case of infective canaliculitis. Universal size fits majority of patients with good tolerance. However, spontaneous plug loss occurs in a significant minority of patients.

Keywords: Silicone punctal plugs, Dry eye disease, Sjogren's syndrome, Post Lasik, Corneal fluorescein staining, Ocular surface disorder, Canaliculitis. Schirmers test, Tear break up time.

References

- Presented a study "Recurrent corneal erosion: - Conservative management on 22 patients, an observational study." As a speaker at the 6th International conference and Expo on Euro Optometry and Vision Science held on March 24-25, 2021.
- Presented a Case report "Posterior capsule rupture following blunt trauma with paintball. How safe is paintball?" as a poster at European Society of Cataract and refractive surgeons, Athens, Greece 2016.
- Presented a Case report "A case of bilateral cornneal graft rejection. Is it the influence of one eye rejection on the other?" as a poster at European Society of Cataract and refractive surgeons, Istanbul, 2015.
- Presented paper titled "Evaluation of dry eyes in Diabetes Mellitus and its correlation with Diabetic Retinopathy"at 33rd Annual conference of 'Research Society for the study of Diabetes in India', held in Bangalore in Sep 2005, Awarded best paper presentation.
- Presented paper titled "Dry eyes in Diabetes Mellitus" at Karnataka State Ophthalmic 24th Annual Conference held in Bangalore in the year 2005.
- Presented paper titled "Ocular manifestations of leprosy" at CME organized by Damien Foundation India Trust. Awarded best paper presentation.
- Presented many papers locally on Dry eyes, Diabetic eye changes and refractive surgeries.

Biography

Sameena Anjum Sheriff is a Cornea, Cataract & Refractive surgeon. She is a fellow of the Royal College of Surgeons, Glasgow, UK. She has done her masters in ophthalmology from M.S. Ramaih Medical College, Bangalore and was awarded gold medal as the best outgoing postgraduate student. Sheriff has been practicing ophthalmology for more than 12+yrs. She has extensive experience in the field of Cornea, advanced Cataract Surgery and Refractive procedures. She also has vast experience managing ocular Ocular Trauma and has performed many Anterior segment repair surgeries. She is an avid academician and has presented scientific papers and posters at national and international Ophthalmic meetings. Her areas of interest are Corneal Surface Disorders, Multifocal and Toric IOLS, Keratoconus, Wavefront optics, Pterygium, and Excimer laser ablation.