Implanted eye tooth helps blind patient see again
First osteo-odontokeratoprosthesis procedure performed in the US

MIAMI, FL, USA: A 60-year-old patient from the US has recovered her sight after surgeons in Miami implanted one of her teeth in her eye. This surgical procedure was a first in the US and undertaken at the Bascom Palmer Eye Institute at the University of Miami’s Miller School of Medicine, where the patient’s eye tooth was implanted as a base to hold a prosthetic lens. The patient was blinded in 2000 by the effects of Stevens-Johnson syndrome, a severe adverse reaction to common drugs causing burning, blistering and sloughing of skin and involved tissue. It also frequently causes blindness, and results in 100,000 deaths per year worldwide.

Dr Victor L. Perez, Associate Professor of Ophthalmology at the Bascom Palmer Eye Institute, and his interdisciplinary team performed a modified osteo-odontokeratoprosthesis (MOOKP) procedure, a complex surgery that had until now been available only in a limited number of eye centers in Europe and Asia. Developed by the Italian ophthalmologist Prof. Benedetto Strampelli in the 1960s, MOOKP has proven effective as a solution to end-stage corneal disease, in which severe corneal scarring blocks vision and corneal transplants are no longer an option but the eye’s internal structures and optic nerve remain healthy.

“For certain patients whose bodies reject a transplanted or artificial cornea, this procedure ‘of last resort’ implants the patient’s tooth in the eye to anchor a prosthetic lens and restore vision,” explained Dr Perez.

In MOOKP, an extracted tooth and surrounding bone are shaved and sculpted, and a hole is drilled to insert an optical cylinder lens. In order to bond the tooth and lens as a bio-integrated unit, they are implanted under the patient’s skin in the cheek or shoulder. The eye specialist then prepares the surface of the eye for implantation of the prosthesis, by removing scar tissue surrounding the damaged cornea.

About one month later, mucous material is collected from the inside of the patient’s cheek and used to cover and rehabilitate the surface of the damaged eye. In the final phase, the prosthesis is removed from the cheek or shoulder and implanted in the eye. The prosthesis is aligned with the centre of the eye, and a hole is made in the mucosa for the prosthetic lens, which protrudes slightly from the eye and enables light to enter the eye, allowing the patient to see again.

“The procedure will help countless of people in the US to regain sight,” said Dr Eduardo C. Alfonso, chairperson of the Bascom Palmer Eye Institute. “Thanks to the work of Dr Perez’s team, patients in the US now have access to this complex surgical technique.”

The local government of Gujarat, a federal state in Western India, has announced a new initiative to incorporate laser dentistry into the dental curriculum of all governmental dental colleges. The move comes after a clinical guide for oral laser applications was released at the 5th National Conference on Oral Laser Applications held in Ahmedabad earlier this month.

According to Gujarat Health Minister Jaynarayan Vyas, the project will be supported by the Society for Oral Laser Applications, an affiliate organisation of the International Society for Oral Laser Applications in Vienna (Austria). If the initiative succeeds, government authorities expect to appoint dental laser specialists in each of the state’s districts soon.