“A Tooth for an Eye” –
New Hope for Corneal Blindness
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Department of Ophthalmology & Visual Sciences
The Chinese University of Hong Kong

To News Editors
For Immediate Release

Osteo-Odonto Keratoprosthesis (OOKP) or “Tooth-in-eye”, originated by Prof Benedetto Strampelli in Italy in 1960s, is a procedure which aims at sight restoration for patients with the most severe type of corneal and ocular surface diseases, for whom other treatments would not be useful. It involves creating a support for an artificial cornea from the patient’s own tooth and the surrounding bone. Prof. Giancarlo Falcinelli of Italy, a student of Prof. Strampelli, has refined and improved the procedure. The results have been encouraging and many patients have been able to maintain their vision since their operations more than 20 years ago.

Because of its complexity, the procedure is at present performed by less than ten centers in the world. The Department of Ophthalmology & Visual Sciences of the Chinese University of Hong Kong has started this procedure in Hong Kong and the Joint Shantou International Eye Center of the Shantou University and the Chinese University of Hong Kong (JSIEC) in April 2005, with the help Prof Falcinelli and his son Dr Johnny Falcinelli.

Why OOKP?
The eye is considered by many as the “Window of our soul”; the cornea is the “Window of the eye”. Like the lens of a camera, the cornea is transparent and has a strong focusing power that can get light rays focused on the retina. Degeneration, trauma, chemical burn, infection, inflammation, and allergy, etc. are some of the common conditions that can affect the cornea, resulting in corneal scarring and opacities, which result in poor vision for the patient. The normally transparent window will become cloudy, just like the damaged camera lens; hence the resulting photographs are hazy.

In some situations, medical treatments (e.g. with eye-drops) will be enough to clear this cloudiness. However, in certain cases where medical treatments fail, surgery will be the next step – corneal transplantation. Yet, in some eyes, the damage is so severe that corneal transplantation will not work. Common examples include severe chemical burn, severe dry eye with corneal opacity, severe drug allergy (Steven-Johnson Syndrome) and repeated graft rejection, etc.

To provide the patient with useful vision, an artificial cornea or “keratoprosthesis” is used. The artificial cornea is made of hard plastic. For the plastic prosthesis to retain in the eye, tissues from the patient’s own body are used. The tooth is ideal because it has a hard part to which the cylinder can be fixed and also it resides in the mouth where it co-exists with soft tissues, as in the eye. Prof. Srinivas Rao said “OOKP is a two-stage procedure. With the refinement and improvement made by Prof. Giancarlo Falcinelli, an overall success rate of 80-90% can be achieved.” Prof. Falcinelli remarked that, “OOKP is a complex procedure but good results can be obtained with modern technology and expertise.”
With the help of Prof. Falcinelli, we have started operating on patients in Hong Kong and in Shantou since April 2005. Four patients have completed both the stage-one and stage-two procedures, while one will have the stage-two procedure later on today. “We estimate that the list of patients would be more than a hundred in Hong Kong and talking about thousands in China” said Prof. Dennis Lam. “It is the last resort for some patients with corneal blindness who will otherwise remain blind.”

A Team Effort
OOKP surgery requires the help of a multi-disciplinary team including the eye and dental surgeons. In the case of Hong Kong, Dr. Lee Kwing Hong, Consultant Oral-Maxillofacial Surgeon in-charge of Department of Health was involved to help bring vision back to patients.

For Inquiry
For patients in Hong Kong who wish to obtain more information on the above can call the telephone hotline 2637 1343 during office hours. For patients in China, the hotline in JSIEC is 86-0754-8393575.