

Modified Osteo-Odonto-Keratoprosthesis (MOOKP)

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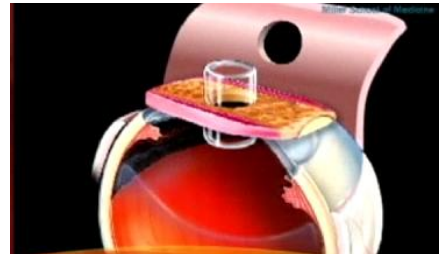
Patients who suffer from blindness due to damaged or a non-functioning cornea require a keratoprosthesis, or replacement of the natural cornea, to be able to see again. A damaged cornea can be the result of severe chemical burns, trachoma, ocular cicatricial pemphigoids, Steven-Johnson Syndrome, or several corneal graft failures. Keratoplasty, the replacement of cornea from a cadaver, generally has a high rejection rate. To avoid rejection, the method of Modified Osteo-Odonto-Keratoprosthesis (MOOKP) is being performed more and more by surgeons.

MOOKP is a procedure where the team of surgeons will extract a canine tooth of the patient as insert a lens into the dentin of the tooth. The tooth then gets placed into the eye. This procedure was first completed by the late Italian surgeon Benedetto Strampelli in the 1960s. The procedure was improved by Italian surgeon Dr. GianCarlo Falcinelli, MD in the 1980s. In the 90s, he started to teach other surgeons all over Europe and Asia the technique that he improved. Finally, in September 2009, the first MOOKP procedure was completed in the US.

The MOOKP procedure is a two step process. The first step is the preparation procedure where the patient's canine tooth is extracted (root included). The tooth then gets shaved down to the root and dentin so that it forms a thin sheet. Next, a 3-4 mm hole is drilled into the dentin of the shaved tooth. A cylindrical lens is inserted into the hole and then

the tooth-lens combination is inserted into the shoulder or the cheek. This last step is done so that the tooth-lens combination can grow tissue and form blood vessels. Finally, an oral mucosa graft from the patient's cheek is inserted on top of the damaged cornea.

After 3-4 months, the second part of the procedure is done. The tooth-lens combination (now with attached tissue) is removed from the shoulder or cheek, and it is placed to the side. The oral mucosa graft is now lifted up slightly so that the damaged cornea can be removed, and the graft gets a matching hole for the lens. The tooth-eye is placed underneath the graft, and now recovery can begin.



The lens allows light to reach the retina so that vision is restored. Some results of this procedure have been the ability to recognize faces, patient develops about 20/70 vision (at best even 20/40), and the ability to read newspaper print. As recovery time increase, vision increases. From being blind for years to having these abilities is what is making the MOOKP procedure more prevalent in Europe and now in the US.

The risks of MOOKP surgery are similar to those that are associated with any keratoplasties. These include extrusion, infection, glaucoma, retinal detachment, globe perforation, vitreous hemorrhage and retroprosthetic membrane formation. The cost for procedure is about 8,000-10,000 Pounds (about \$13,300-\$16,600).

Sources:

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