# An Aid for Patients with Corneal Blindness in Morocco

Case report from Hôpital Cheikh Zaïd in Rabat – Coronis Foundation for the Advancement of Education and Training

In contrast to Europe, in the developing countries eye injury is the most common reason to see an eye doctor. Because primary care by a qualified ophthalmologist is the exception rather than the rule especially in sparsely populated areas, in developing countries the result of eye injuries is very often blindness.

Immigrants from African countries are frequently qualified as economic refugees. Their individual fate is rarely scrutinized, although a lack of medical care is one of the driving forces for migration. It is our experience from the last years that there is a great interest in training and qualification, especially among young doctors. We believe that we can contribute to the treatment of people in developing countries if we improve the local medical care continually by helping people to help themselves. Our experience in the cooperation with Hôpital Cheikh Zaïd in Rabat may serve as a model.

The Director of the Eye Department of this university hospital, Professor Mohammed Belmekki contacted us in the beginning of 2015. He asked for cooperation in the care of patients with corneal blindness with keratoprostheses. Approximately 500 keroplasties are performed in that state-of-the-art equipped clinic annually. For a small, but for Hôpital Cheikh Zaïd, not insignificant number of patients, e.g. those with Stephens-Johnson Syndrome, Lyell-Syndrome, ocular pemphigoid, or alkali or acid burn, a long-term rehabilitation with keratoplasty is not possible. Professor Belmekki therefore asked us for support to introduce keratoprosthetics in his clinic.

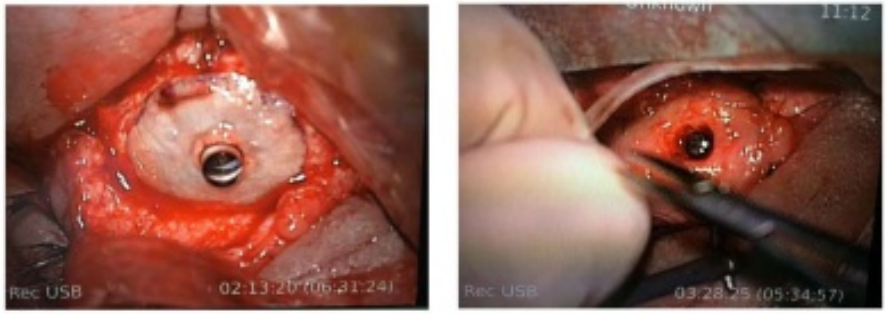

**Fig.: Implantation of the keratoprosthesis**

This clinic is particularly suitable to help patients. It is a teaching hospital with nine well equipped operating rooms (ORs), and there are two mobile ophthalmologic ORs mounted on a truck tractor train. Professor Gernot Duncker of the Eye Institute in Halle, Germany, is our first partner. He is not only an experienced ophthalmic surgeon and educator, but also has agreed to help his colleagues in Rabat. During the last two years he spent several days over the course of four visits for surgeries in Rabat. The last surgery took place April 09, 2017.

In February 2016 Professor Belmekki presented a 38-year old patient who was bilaterally blind due to a burn. In a first surgical session in May 2016 Professor Duncker released the scarred lids of the patient from the conjunctiva and the eye-ball and covered the extremely thinned cornea and sclera directly with buccal mucosa, because a corneal transplant was not available at that time. In a second session in November 2016 Professor Belmekki folded back the buccal mucosa, performed a keratoplasty of the patient´s unstable cornea, and resutured the buccal mucosa. In a last session Professor Duncker, together with Professor Belmekki, implanted a MIRO CORNEA UR keratoprosthesis individually manufactured for this patient into a lamellar pocket. During a 4.5-hour surgery under general anesthesia the eye muscles, which were completely joined with the conjunctiva, were released. Then the lamella between the buccal mucosa covering and the subjacent cornea was dissected, and the keratoprosthesis was implanted. At the end of surgery the lids were closed by a suture. When the lids were opened after 5 days the patient was already able to see hand movement. Currently he is on track with his rehabilitation.

The hitherto existing experiences in Rabat have demonstrated that with personal engagement and manageable financial sources we can provide a sustainable contribution to the improvement of medical care in developing countries. This encouraged us to found the nonprofit Coronis Foundation. The mission of the Foundation is the advancement of public health through education and training, and cooperation in development and care for handicapped patients with a special focus on eye diseases. Further cooperation with ophthalmologists who donate time and resources are important for the success of our project, as is the funding via financial contributions and external donations.

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English translation from: Ophthalmologische Nachrichten (6) 2017