Amniotic membrane transplantation viable and valuable treatment for paediatric symblepharon

Cheryl Gutman in Washington, DC

AMNIOTIC membrane transplantation (AMT) provides an effective method for ocular surface reconstruction after symblepharon excision in children, according to the findings of a retrospective review presented at World Cornea Congress V.

"Longer follow-up is needed, but based on our experience so far, AMT seems to be safe and effective in paediatric cases and has value for improving vision in children who present early enough as well as for increasing comfort regardless of patient age," said Ken K. Nischal MD, Great Ormond St. Hospital for Children, London, UK.

Dr Nischal and his associate Marcela Espinosa, MD, presented a retrospective review of outcomes after AMT in a series of five eyes of four children ages 46 to 179 months old. Two children (three eyes) had dystrophic epidermolysis bullosa (EB) and presented with symblepharon and massive pannus, a third child had lampryngo-symblepharon and had granuloma, and in the fourth child who was HIV-positive, symblepharon with central conjugal scarring was present in association with measles-induced ocular surface disruption.

In all eyes, superficial keratectomy was performed with symblepharon lysis to remove the pathological tissues. The amniotic membrane was placed stromal surface down and fixed with interrupted 10-0 Vicryl sutures. Silicone sheets were used as needed to maintain the fornix, and bolsters were placed on the skin to prevent 'cheese wiring' of the sutures.

In all cases, a central tarsorrhaphy was performed to hold the amniotic membrane in place. Postoperative care included application of a steroid-antibiotic ointment three or four times daily. The central tarsorrhaphy and silicone sheets were removed after three weeks.

"The grafted membrane can be protected in adults by placement of a bandeau contact lens or conformers, but children will tend to rub their eyes and will not keep in the conformers. Therefore, it is well worth it to do a central tarsorrhaphy to maintain the position of the graft in cases where fornix reconstruction is needed," Dr Nischal said.

AMT resolved in most eyes

After three weeks, the AMT had resolved in three eyes, including in the children with epidermolysis bullosa and LOGIC syndrome who underwent unilateral surgery and in one eye of the child with epidermolysis bullosa who had bilateral AMT. Although the membrane was still present after three weeks in the fellow eye of the latter child, it spontaneously resolved after four days with increased topical steroid treatment.

However, in the HIV-positive child, the transplanted membrane had become organised and had to be excised while the child was under general anaesthesia.

"Resorption of the amniotic membrane is T-cell mediated, and so we are postulating that the reaction observed in this case was a consequence of the child being HIV-positive. Based on this experience, we suggest that clinicians consider the possibility of immune deficiency if the amniotic membrane does not resorb as expected," Dr Nischal said.

Results especially good in epidermolysis bullosa cases

Follow-up ranged from nine to 15 months for the children with epidermolysis bullosa and LOGIC syndrome, and was three months for the HIV-positive child. In both children with epidermolysis bullosa, the ocular surface reconstruction has remained successful and has been associated with increases in visual acuity.

"Most ophthalmologists will encounter a child with epidermolysis bullosa some time in their careers, and it is nice to know that AMT provides a very effective method for ocular reconstruction in those cases," Dr Nischal said.

The HIV-positive child had no change in vision but benefited with improved comfort. The child with LOGIC syndrome had granulomas recur by nine months. That experience was consistent with a previous report in the literature that also described recurrence of granulomas after AMT ocular surface reconstruction in a child with LOGIC syndrome, he noted.

"The child we treated was about 14 years old and visual acuity remained unchanged at hand motion. However, we think AMT is still worthwhile in these patients and that vision improvement may be achieved for children who present at a younger age. Even if the underlying disease causes the ocular surface to become disrupted again, surgery can be repeated with placement of another graft, and meanwhile, the child will have benefited from a period of useful visual input," Dr Nischal said.

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Microbial contamination study points to need for between-patient slit-lamp disinfection

Cheryl Gutman in Fort Lauderdale

INDIVIDUALS who undergo slit-lamp examination face a potential risk for cross-infection if the instrument is not cleaned between patients, according to a study presented by Areeb H. Moosavi BSc MBBS, and colleagues at the annual meeting of the Association for Research in Vision and Ophthalmology.

Their investigation was designed to determine the extent of microbial colonisation of various slit-lamp components during the course of a single clinic session at a specialist UK Eye Centre and to evaluate the effectiveness of their institution's current regime for slit lamp decontamination that involves routine cleaning by the nursing staff in the morning using a chlorhexidine solution.

The researchers sampled 17 slit lamps for microbial colonisation, including five instruments used in the emergency room and 12 located in the outpatient clinic. They obtained 51 swabs, as each slit-lamp was swabbed at three different sites (head rest, chin rest, transformer switch), and at three different times: first thing in the morning prior to cleaning, immediately after the routine cleaning and at the end of the clinic session.

Standard hygiene insufficient

The results showed microbial colonisation on each of the three slit lamp components at the start of the day (11.8% to 35.3%) and that the morning cleaning was effective for reducing the microbial load but did not completely eradicate colonisation. By the end of the session, however, there was a significant increase (P = 0.011) in culture-positive swabs.

Most of the isolates represented normal skin flora (Staphylococcus epidermidis). There were no fungal-positive cultures. Of concern, however, three swabs taken from two slit-lamps in the outpatient clinic grew penicillin-resistant Staphylococcus aureus.

"Hands of healthcare personnel and tonometer heads are known vectors of nosocomial infections in the ophthalmic environment, and we were aware of cases of microbial keratitis developing in patients who were recently seen in the outpatient clinic at our major referral centre. No cause and effect relationships have been proven in the latter cases, but we were interested in investigating whether the slit-lamp might pose a possible source of infection for patients," said Dr Moosavi.

"Our findings suggest it may be worthwhile to re-examine the protocol used at our institution for the initial daily cleaning to further reduce or even eliminate microbial contamination. More importantly, however, we believe they point to a need to clean the slit-lamps between patients. Pressure to take short cuts in order to facilitate patient throughput in a busy clinic or ER setting may put our patients at risk for potentially serious infections."

Of the 51 swabs taken first thing in the morning prior to cleaning, 14 (27.5%) were positive. After the cleaning, 17.6% of the 51 swabs grew bacteria, whereas 43.1% were positive at the end of the session. The rates of positive cultures for the last sampling were similar for the slit lamps in the ER (46.6%) and the outpatient clinic (41.7%).

At the first sampling, microbial colonisation rates were similar for the head rests and chin rests (35.3%). This rate was three times higher at those sites than for the transformer switch (11.8%). By the end of the session, the rate of microbial colonisation had increased for each of the three components, but the increases were especially marked for the head rest and chin rest and minimal for the transformer switch.

Among the 17 instruments, 12 had chin rests that grew positive cultures, nine had head rests that grew positive cultures, and three had evidence of bacterial contamination of the transformer switch. Two head rests of clinic instruments and the chin rest of one of those slit lamps were the sources of the penicillin-resistant S. aureus cultures.

Dr Moosavi noted that the transformer switch was swabbed in the study because it is not routinely involved in the clinic cleaning regime. Even though it is only handled by the physician and not the patients, it is often the last thing touched by the physician (to put the slit lamp on) before contact with the patient.

"We were pleasantly surprised to find that the bacterial load on the transformer switch did not increase during the day, and that may represent good hand washing techniques by the physicians. However, we still recommend that the slit lamp cleaning at the beginning of the day, and between patients, should include the transformer switch," he said.

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