Amniotic membrane transplantation viable and valuable treatment for paediatric symblepharon

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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 laryngo-onycho-cutaneous syndrome (LOGIC type) and had symblepharon with granulomata, and in the fourth child who was HIV-positive, symblepharon with central corneal 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 involved 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 bandage 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.

Ken K Nischal

AMT resorbed in most eyes

After three weeks, the AMT had resorbed 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 resorbed 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 granulation 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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