

Use of amniotic membrane in dermatology

Sir,

Treatment of extensive epidermal damage such as toxic epidermal necrolysis, pemphigus or burns is a formidable challenge, usually managed by steroids with or without skin grafting. The authors have regularly been using amniotic membrane for burns since 1988, though not for dermatologic problems. Amniotic membrane has been used in burns and other wounds and ulcers since 1910. This is an ideal biological dressing in preventing fluid loss, protecting against desiccation, reducing contamination and relieving pain, providing ideal moist environment for healing.^[1-3] Its bacteriostatic effects have been documented.^[4-6] It has the advantage of ready availability at no extra cost to the patient, which is relevant in developing countries.^[2,7] Use of amniotic membrane in complex venous ulcers and intractable dermatological conditions have been reported.^[8,9]

We were forced to use amniotic membrane to cover extensive necrotic and painful ulcers in a patient who was on steroids for pemphigus, whose general condition precluded the possibility of anesthesia or surgery. While medical treatment started and continued on the basis of biopsy and culture reports, the pain and frequency of dressings forced us to try alternate methods, and we used amnion to cover the ulcers to reduce pain. We noted that patient was not only relieved of pain, but also had remarkable spontaneous healing. This experience encouraged us to try amnion for other dermatologic problems such as toxic epidermal necrolysis and Stevens Johnson syndrome.

A 48-year-old lady with pemphigus vulgaris, well controlled and in remission with 30 mg prednisolone developed painful tender nodules on the right leg, which broke down and coalesced into large ulcers with necrotic base. She was started on medical treatment based on the biopsy and culture reports. However, the ulcers continued to be extremely painful. Skin grafting was ruled out because of poor general condition, and for fear of non-healing donor site. The excruciating pain and the need for frequent change of dressings forced us to try amniotic membrane to cover the ulcers [Figure 1]. The patient reported immediate pain relief on application of amnion and there was significant reduction in the ulcer discharge, and so, frequency of dressings reduced considerably, and



Figure 1: Ulcer covered with amnion



Figure 2: Healed ulcer

Table 1: Advantages of amnion cover

	Amnion	Conventional dressing tulle gras and gauze
Cost	Negligible	Costly, cost increases with larger area
Number of dressings	Usually one time only	Repeated dressings
Time	Change of dressings are usually not necessary- saves lot of time	Daily or alternate day dressing change is necessary
Pain	Painless dressing	Dressings are painful
Discharge	Stops discharge keeps the site dry	Only absorbs discharge may soak through
Healing	Optimum healing, can be monitored from outside	Healing slowed down by mechanical and chemical trauma
Appearance	Neat, dry and odourless	Often wet, oozing malodourous

Table 2: Disadvantages of amnion

Collection	Donors should be tested for HIV and HBsAg, and collected with sterile precautions and stored in frozen state.
Initial application	Takes extra time to stick to the wound (20 mts)
Purulent discharge	May collect under amnion and push the membrane away
Contraindications-	Bleeding wounds, frank pus discharge.

even the subsequent amnion dressing changes were significantly painless. After three months of treatment, healthy granulations were noted and most of the ulcers healed spontaneously within four months. The other small areas of ulcers were skin grafted to complete the healing [Figure 2].

A 58-year-old man was admitted with Stevens Johnson syndrome after carbamezepine ingestion. He developed large areas of denudation on the trunk, face and limbs. After washing these areas with sterile saline, amnion was applied on it and systemic steroids and antibiotics started. With amnion application he was free from pain, discomfort and discharge; the covered areas remained dry and ulcers healed in 17 days without any further dressing and he was discharged on the 17th day.

Amniotic membranes obtained with sterile precaution from normal delivery cases tested negative for HIV and HbsAg, were cleaned and washed several times in sterile water to remove traces of blood, and then in sterile saline and heparin, and stored after adding 80 mg of gentamicin^[1] at -20 degrees celsius. A few hours before application, this was thawed and applied with surgical sterility on the wound. A liberal frill of amnion was extended onto the normal surrounding skin and the limb kept elevated to let it dry.

Having seen encouraging results, we feel that amnion is useful for complex and extensive skin loss, particularly in developing countries where the cost of dressing material adds to the patient's burden. The

following chart summarizes the uses of amnion, its advantages and disadvantages [Tables 1 and 2].

Annamma John, John Oommen¹

Sri Ram Medical Centre, and G. Kuppuswamy Memorial Hospital, Coimbatore, ¹Malabar Institute of Medical Sciences, Calicut, India

Address for correspondence: Dr. Annamma John, No: 30, Cornerstone house, Kanniya Nagar, TVS Nagar Road, Koundampalayam, Coimbatore 30. E-mail: johnannu2001@yahoo.com

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