BACKGROUND:

The use of topical immunosuppressants has been anecdotally reported for the treatment of rejection in vascularized composite allotransplantation. The aim of this study was to evaluate the effectiveness of topical tacrolimus and clobetasol in the prevention and treatment of rejection.

METHODS:

Seventy-six hemiface allotransplants, between ACI (RT1) donors and Lewis (RT1) recipients, were performed in 11 groups and treated with topical tacrolimus or clobetasol, or in combination with systemic cyclosporine A and anti-αβ-T-cell receptor antibody for 1 week. Topical treatment increased the survival of the allograft in all groups.

RESULTS:

Best outcomes were obtained in the groups treated with systemic therapy and topical tacrolimus. Expression of proinflammatory cytokines interleukin 2, interferon γ, tumor necrosis factor α, and transforming growth factor β correlated with clinical signs of rejection and the final outcomes. Clobetasol application was associated with a marked depletion of lymphocytic populations, and dermal and epidermal atrophy.

CONCLUSIONS:

Both topical tacrolimus and clobetasol were effective in treating episodes of acute rejection, and the best outcomes were achieved when their application was initiated after systemic immunosuppression. Topical tacrolimus proved to be a preferable adjunct agent to the systemic therapy by preventing both the local and systemic complications.