LETTERS TO THE EDITOR

Studies in thoracic aortic graft infections: The development of a porcine model and a comparison of collagen-impregnated Dacron grafts and cryopreserved allografts

To the Editor:

I enjoyed reading the animal study of thoracic aortic infections by Rowe and colleagues,¹ in which they examined timing of graft inoculation with staphylococci and compared the resistance to infection between cryopreserved porcine allografts and collagen-impregnated Dacron grafts. They concluded that the high morbidity and mortality of prosthetic graft infections demands a search for improved methods of prevention and therapy. In addition, from their animal model, they believe that collagen-impregnated Dacron grafts were as good as and possibly superior to cryopreserved porcine allografts in resisting infections caused by bacteremia.

This experimental setting tested whether prosthetic graft inoculation in the presence of bacteremia leading to subsequent graft infection is better prevented by collagen-impregnated Dacron grafts or by cryopreserved porcine allografts. Thus, this has been a study of how to prevent infection and not how to treat cardiovascular infection. It does not have a relation to the surgical treatment of established native or prosthetic aortic infection when allografts are present. Prosthetic graft infection is a disastrous complication. However, results have markedly improved and operative mortality rates for major aortic infection have decreased to as low as 6%² to 13.6%.³ This improvement should be acknowledged by the authors. Moreover, the 30-day mortality for thoracic aortic graft infection has been nearly eliminated.² Excellent survival free of reoperation is achieved when cryopreserved aortic allografts are used. In my opinion, the resistance to infection of cryopreserved vascular allografts is experimentally^{4,5} and clinically proven. However, these relevant studies²⁻⁵ were not referenced in this article.

Prevention of graft infection, as examined in this study, is quite a different topic. The use of allografts to treat established vascular infection must be accompanied by a simultaneous antibiotic treatment⁴ to be effective, a point that is not considered in this study. Hence, I am not surprised that the

authors conclude that cryopreserved porcine allografts are at least equivalent and possibly inferior to collagen-impregnated Dacron grafts in prevention of infection, because their study underestimated the importance of concomitant local and systemic antibiotic treatment at the time of allograft implantation. The suggestion that collagen-impregnated Dacron grafts may be more resistant to infection than cryopreserved allografts may be true for this porcine aortic model. Obviously, it does not correspond to the clinical results as mentioned. Therefore, recommendations cannot be made from this animal study regarding how to treat established vascular infection in the clinical setting. I further doubt that it was necessary (1) to demonstrate in animals the high mortality of untreated vascular graft infection (phase I), which is well known, and (2) to speculate about the resistance to infection of cryopreserved allografts (phase II), which is clinically proven to be safe, reproducible, and cost-effective.

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