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Invited comment

Cyclosporine (Sandimmune) and wound healing

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Immunosuppressive medication allows transplantation of organs across histocompatibility barriers. To the established immunosuppressants azathioprine, steroids and antilymphocytic serum has been added, the immunosuppressive peptide cyclosporine (Sandimmune) which has caused a revival of a wide variety of organ transplantation. Both, the organ survival and quality of life of the transplant recipients has improved dramatically with this new immunosuppressant.

Any immunosuppressive therapy, however, is associated with side effects, e.g. bone marrow depression and hepatotoxicity (azathioprine), Cushing syndrome (steroids) and nephrotoxicity (cyclosporine). The side effects can be minimized by careful dose adjustments or by changing the immunosuppressant if the patient shows sensitivity to the treatment of choice [1, 4].

Organ transplantation may be complicated by local bleeding, infection, stenosis of the anastamosed vessels or ureter.

Wound healing has not been a major clinical issue. Experimental studies showed a retardation of tissue repair in animals immunosuppressed with azathioprine or steroids [8]. In the case of cyclosporine immunosuppression the experimental data are somewhat conflicting ranging from normal to impaired wound healing [2, 3, 5, 6, 9, 10]. General immunosuppression may be however associated with reduced reparative capacity [12]. In this issue, Recker et al. demonstrated a retardation of the repair processes in experimental ureterocystoneostomy in rats. Delayed reconstitution of the epithelium with pleomorphic microvilli were shown which were fully reversible. As expected no local stenosis was observed at the ureterocystoneostomata even at the rather high cyclosporine doses. It should be noted that adequate controls e.g. animal treated with alternative immunosuppressants should be included in such experimental studies.

Thus, so far both clinical and experimental data indicate almost normal tissue repair processes at uretercystoneostomies and anastamoses of larger vessels and bronchi under cyclosporine immunosuppression.

A major issue, alluded in this study, is the risk of tumour development as well as infectious complications. Present evidence however indicates that the risk of tumour development and of infection is not higher – if not lower – with cyclosporine as compared to conventional immunosuppression [7, 11].

However, well controlled clinical and experimental studies with appropriate controls are certainly welcome in this new field of clinical endeavour.

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