
Abstract
The effect of dietary zinc deficiency on the breaking strength of abdominal skin incisions was studied in rats 21 days postoperatively. Zinc deficiency was induced with a low-zinc diet (1.4 mg zinc/kg diet) 14 days preoperatively. Thereafter serum zinc was reduced by 60%, but the zinc concentration in unwounded skin and liver remained similar to that of pair-fed controls given a zinc-adequate diet (33 mg zinc/kg). The wound breaking strength (maximal load until wound disruption) was significantly lower in the zinc-deficient group (75% that of control wounds). The zinc concentration in wound tissue had decreased in the zinc-deficient group, but the wound hydroxyproline concentration was similar in the two groups. The results indicate that zinc is an important trace element during the early remodeling of scar tissue.