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EXPERIENCES WITH MAJOR SCALDS RESULTING FROM ACCIDENTAL IMMERSION IN JAPANESE-STYLE HOT BATHTUBS

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Purpose/Background: In Japan, pediatric major scalds that are sometimes fatal frequently result from accidental immersion in hot bathtubs. We reviewed our recent experiences with serious scalds related to hot bathtub immersion to gain a better understanding of the epidemiology, clinical characteristics and outcome of this type of injury.

Material & Methods: All children admitted to the emergency center of our institute after sustaining burn injuries from 1974 to 2001 were identified. Each patient's record was reviewed to study the epidemiology, the mechanism of the scald and the treatment results, focusing particularly on children with scald due to hot bathtub immersion.

Results: A hundred and sixty five children have been admitted to our hospital due to burn injuries, and scald burns accounted for 90% of the patients. Sixty six cases of the scald injury were due to hot bathtub immersion. We have no experience with an extended bathtub immersion burn for the last 4 years. Twenty-five of the patients had a burned area greater than 30% of total body surface area (TBSA), including 10 with an area exceeding 60% BSA. Those patients with an extended burned area have been treated with lactate ringer solution but sometime treated with hypertonic lactate saline (HLS) solution and/or early biological dressings if necessary. We monitored all patients' urinary output, blood pressure and CVP if possible. The eight patients with a burn area greater than 60% BSA have survived. Three patients with larger burn areas of 65, 85 and 90% BSA respectively died. The 3 children who died after hot bathtub immersion, died from lung edema with heart failure in one, renal failure 19 days after admission in one and the third from sudden cardiac arrest when the patient received a general anesthetic 10 days after admission. The survival rate with hot bathtub immersion greater than 30% TBSA was 88%.

Conclusions: The most serious pediatric burn injury in Japan is scald injuries due to bathtub immersion. Early grafting and HLS are useful tools but the best management for major burns remains elusive. An important factor in the early management of major burns is fluid resuscitation but there is no adequate marker to control water balance. Careful observation of urine output and blood pressure are important.