

my experience, is the association of these injuries with child neglect and abuse. These burns are never life-threatening, but the environment that produces them may be.

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### Rolling Belt Injuries in Children

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**Objective.**—Children with rolling belt injuries to their hands usually have severe friction burns in addition to flexor tendon, digital nerve, and artery injuries. The results of treatment of these injuries were presented.

**Methods.**—There were 4 type 1, 9 type 2A, 8 type 3A, 13 type 3B, and 10 type 4 finger injuries in 16 patients, aged 1–9 years (Table 1).

**Results.**—Ten fingers had been amputated, and 3 were reimplanted. There were 11 revascularization procedures performed, 27 osteosyntheses, 9 flexor tendon repairs, 5 digital nerve repairs, and 12 full-thickness skin grafts. Stump closure was performed in 13 fingers including 7 fingers with failed reimplantation or revascularization. The overall finger survival rate was 71%. In fingers with circulatory problems, the survival was only 50%. Functional results were good (useful grasp and pinch) in 7 patients, fair (function in assisting other hand) in 7, and poor (no useful function) in 2.

**Conclusion.**—Functional results were unsatisfactory probably because of the small diameter of the vessels, the high rate of avulsion, and the marginal indication for replantation.

► The safety features on newer farm machinery and an increased focus on child safety are slowly making these injuries disappear in the United States. Paradoxically, the political efforts to preserve the “family farm” may retard progress in this area; it is usually the small family-run farms where children are enlisted to assist with chores that may include operation of heavy machinery or tractors. Such small enterprises are typically exempt from the occupational safety regulations that have improved the well-being of agricultural workers in larger enterprises.

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TABLE 1.—Classification of Rolling Belt Injuries

Type 1	Only skin lesions
Type 2A	Skin, tendon, nerve and artery injured, circulation present
Type 2B	Skin, tendon, nerve and artery injured, circulation absent
Type 3A	Skin, tendon, nerve, artery and bone injured, circulation present
Type 3B	Skin, tendon, nerve, artery and bone injured, circulation absent
Type 4	Total finger amputation

## Suggested Reading

Chen C-L, Chiu H-Y, Lee J-W, et al: Arterialized tendocutaneous venous flap for dorsal finger reconstruction. *Microsurgery* 15:886-890, 1994.

► Three cases are presented illustrating the novel concept of tendocutaneous reconstruction for composite finger defects requiring skin and tendon. The vascular arrangement of arterialized venous flow is used to simplify the flap design and works for these small flaps. The authors do not tell how difficult such a procedure is for the nonmicrovascular hand surgeon. The technique has limited application.—W.M. Swartz, M.D.

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