

Spin Dryer Injuries

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Summary

Three children were injured by putting their arms into spin dryers. In each case the injuries were severe. Though not common, these accidents should be preventable. Warning notices are useless for toddlers, and a built-in safety mechanism seems the only certain means of stopping such accidents.

Introduction

Spin dryer injuries are not common, but may be extremely severe and should be preventable.

Case Reports

Case 1.—A 4-year-old boy put his arm in a spin dryer. He sustained a displaced spiral fracture of the shaft of his left radius and ulna. Fortunately the fracture was closed. The fracture of the ulna was comminuted. Under a general anaesthetic the fracture was manipulated, the alignment was corrected, and the limb was immobilized in an above elbow plaster cast with the forearm in the midprone position. The plaster cast was split initially in case of swelling, and was removed after an interval of six weeks. Both fractures had united, and mobilizing exercises were begun. The

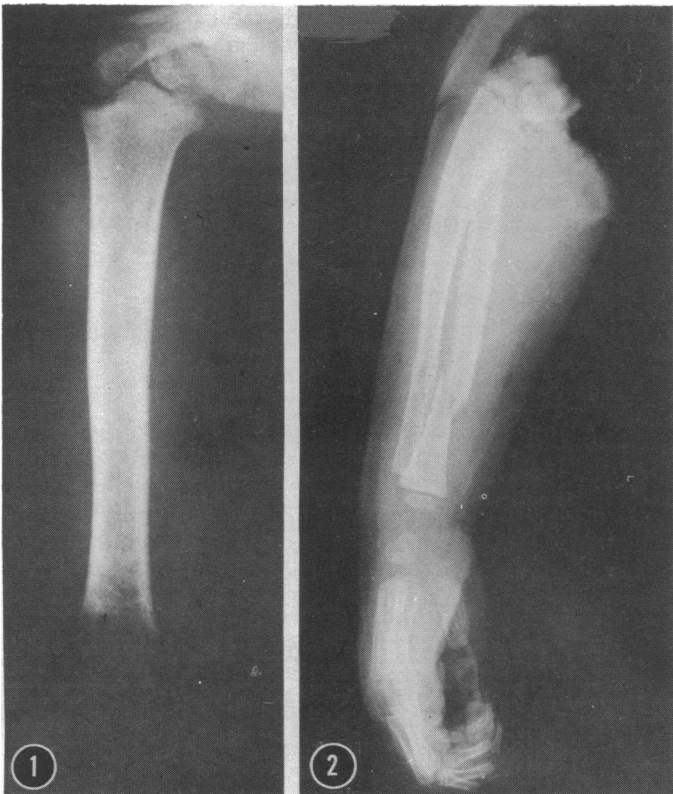


FIG. 1.—Case 3. X-ray picture of arm avulsed through distal humerus. FIG. 2.—Case 3. X-ray picture showing spiral fractures through midshaft of radius and ulna.

child regained full flexion and extension at the elbow and wrist but he lost the last few degrees of pronation of his forearm.

Case 2.—A 7-year-old girl caught her arm in a spin dryer and sustained a comminuted long spiral fracture of the midshaft of her humerus. This was associated with a neurapraxia of the radial nerve and bruising and soft tissue injury to the forearm and upper arm. The injury was treated conservatively by rest in a collar and cuff and body bandage. The fracture united and the patient regained full function in her radial nerve.

Case 3.—A 2-year-old girl caught her right arm in a spin dryer and avulsed the limb at the level of the distal humeral epiphysis (Fig. 1). The child was immediately taken to hospital and was resuscitated. Unfortunately the limb was not brought in the same ambulance and arrived 90 minutes later. Attempts to perfuse the limb proved unsuccessful due to thrombosis of the capillary bed, and the three main nerves were avulsed. Therefore, the stump was cleaned, the bone ends were trimmed, and the injury was converted to an above-elbow amputation with primary closure of the skin flaps. Examination of the ablated forearm showed severe swelling and bruising and x-ray examination showed spiral fractures of the midshafts of both the radius and the ulna (Fig. 2). The wound healed by primary intention, and the child was fitted with a prosthesis.

Discussion

These injuries could have been avoided. The current design of the usual household spin dryer has inadequate safety precautions; in most appliances the machine gradually stops once the lid is opened, but it continues to revolve for up to 30 seconds before coming to a halt. Most spin dryer injuries are sustained by young children, many of whom have not yet learnt to read. Therefore printed precautions displayed on the machine are not sufficient. What is required is a built-in safety mechanism that will prevent further revolutions of the drum once the machine is opened. One method of achieving this would be the development of a powerful braking system to bring the machine to an immediate halt once the lid has been opened. Other possibilities would be the provision of a device which locked the door until the drum had come to a complete standstill, or a second inner door. The brakes would be applied either by switching off the machine or by opening the outer door.

Over the past few years domestic accidents have become more frequent and it is important that safety measures should be built into domestic appliances. If industry does not incorporate satisfactory safety devices into their domestic appliances these should be demanded by law and the sales of all appliances which do not have adequate safety precautions, such as spin dryers, forbidden. Injuries due to inadequate safety devices on many domestic appliances are potentially serious but preventable.

Spin dryer injuries are not common. The three patients were seen over a three-year period, during which time about 12,000 patients were admitted to the accident service and 110,000 new patients were treated on an outpatient basis.

The findings in the present three cases indicate that the injury is due to a rotational strain, the fracture being spiral. Even more important are the soft tissue injuries which may be associated with avulsion of the limb, damage to the nerves and other soft tissues, severe bruising, and thrombosis. In case 3 it was impossible to attempt to resuture the limb since capillary and venous thrombosis prevented its perfusion.

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