A Special Bed for the Severely Burned Child

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Received June 26, 1973

Summary. Experiences in the treatment of burns at the Ljubljana Unit led to the construction of a special bed for children. On the Bukowansky pattern, a frame with a nylon net is used instead of a mattress. This can be fixed at different levels, as well in Trendelenburg’s or Fowler’s position. This allows easy handling, exposure and showering of the patient. The debris and water is collected in a stainless steel basin underneath. The head frame can be removed to facilitate anesthesia or emergency intubation.

The severely burned child presents one of the most difficult problems in nursing. Adequate care of the extensive burned surface has been the focus of various endeavours for many years.

As early as 1941, A. B. Wallace was concerned with a construction of a special bed frame for burned children. In 1949, when this author revived the exposure treatment which proved to be so beneficial for children, an adequate bed frame for this treatment became essential in order to keep all the exposed burned surfaces dry.

In 1957, A. J. Evans devised his ventilating frame with a tight net of nylon stretched on it. He made the hard netting more comfortable by the use of layers of polyurethane foam.

In 1965, A. W. Wilkinson described a similar cot-frame for burned children.

Nowadays hospital equipment manufacturers (e.g. Hoskin & Son, Birmingham) produce special frames for burns treatment, which can be attached to a child’s cot.

In our unit the dressing and exposure methods are both used routinely and are very often combined.

Regardless of the present theoretic and experimental concepts of the ideal biological environment for a large burn wound, physical cleanliness and dryness have proved to be the basic demands for large burns, because they significantly reduce the burn illness and infection and make an essential contribution to the comfort of the child.

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In accordance with this concept, much thought and research has been given not only to the net and frame, but also to the details of the construction of the bed for the critically burned child in recent years.

In order to achieve this aim we were concerned with three basic points:

1) to keep the burn wounds dry, whether dressed or exposed;
2) to allow easy access to every part of the child's body, bearing in mind the complex procedures necessary during the bed care;
3) to secure the greatest possible comfort for the child.

In technical cooperation with the firm J. Bukowansky (see technical data), a special bed was constructed in 1971, which meets the following demands:

1) the intensive care of the severely burned child, which includes all the activities needed in the shock phase and later, e.g. intravenous fluid replacement, nasogastric tube introduction, emergency intubation (Fig. 1) and cardiopulmonary reanimation, indwelling catheter, management of frequent vomiting, and care for bowel function.

The side rails and the foot rail can be lowered, and the head rail can be removed in order to allow emergency procedures on the head or neck. A metal rod for infusions and transfusions is attached to the head or foot end of the bed.

2) The plastic net (made of polyprene) mounted on the metal frame, on which the child lies, keeps the dressed or exposed burned surfaces dry.

The children feel quite comfortable on the frame even after some weeks. No bed sores have been observed. The pressure points can be additionally protected by small sterile cushions made of gauze and wool or by layers of polyurethane foam (Fig. 1).

The plastic net can be easily cleaned and changed.

The frame with the net can be raised or lowered at both ends (e.g. for Trendelenburg's position) Figs. 2 and 3.

The child can be put in the bath or under the shower while lying on the frame.

3) Under the frame with the net there is a metal trough for collecting urine, faeces and vomitus. This makes it possible to measure fluid output.

Two metal arches can be put over the frame. They make it feasible to cover the child with a sterile sheet to avoid excessive heat loss.

4) The bed can be easily transported on four wheels which are provided with foot-operated brakes.

This bed has so far been in use for two years in our unit, where about 250 burned children have been admitted in this period, and has proved to be very helpful in nursing and medical care of the burned child.