



Hand splintage following surgery for dystrophic epidermolysis bullosa

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SUMMARY. Patients with Epidermolysis Bullosa, a rare hereditary blistering skin disorder, pose many problems in view of the extreme fragility of their skin. Following surgical division of syndactylised digits hard acrylic splints have traditionally been provided. This paper presents a splint design which is quicker and safer to manufacture, is readily altered and better tolerated by the patient, and has led to improvement in the maintenance of surgical correction.

In Epidermolysis Bullosa, following recurrent blistering, adjacent unhealed digits adhere,¹ and become encased in an epidermal cocoon (Fig. 1).

Surgical division of the digits is required when function is impeded.² This is when fixed flexion occurs



Fig. 1

Figure 1—Untreated hand deformity (moderate) seen in dystrophic epidermolysis bullosa.

rather than webbing. However the first web space, which is essential for good hand function, must be released if contracted.

Following surgical division of the digits, hard acrylic splints have traditionally been used. These are manufactured by taking an impression in dental alginate at an early dressing change under anaesthesia once grafts have taken. This requires sutures to be inserted in the fingertips to allow suspension of the hand over a plastic box and alginate to be poured over it (Fig. 2). Once set, the hand is withdrawn from this mould and during this there is the potential for skin trauma.

Acrylic splints cannot be made immediately as two further stages follow the taking of the impression. In some cases, the delay of a week is sufficient to allow recurrence of fixed flexion and webbing. Many patients have required further surgery every 1-2 years.

Other disadvantages of acrylic splints include their unalterable shape, expense, inadequate maintenance of position and inability to be replaced quickly. Most importantly, patients complain that the splints rub the skin causing further trauma, so are poorly tolerated.

At the Hospital for Sick Children, London, splints are now made from a thin, light-weight thermoplastic



Fig. 2

Figure 2—Casting process for manufacture of traditional acrylic splintage.



Fig. 3

Figure 3—New light-weight splints with silicone rubber inserts.

which conforms to the hand contours well, with silicone rubber between the digital webs to prevent recurrence of fusion. Straps to maintain the extended position achieved by the splint are lined with orthopaedic felt to allow firm pressure and prevent flexion or friction due to movement. These splints are usually made at the second dressing change and are immediately ready for use (Fig. 3). This reduces the number of anaesthetics, which are in themselves fraught with difficulties.³ The splints are worn at night but during the day the children are encouraged to use their hands. These splints are preferred by the patients, and are easily altered and renewed.

In view of these factors, this centre has abandoned traditional acrylic splints. The newer splints have not been compared in clinical trials with acrylic ones, but it is our observation that the contractures and deformity observed with acrylic splints are prevented by the new techniques. It is hoped that this will prolong the interval between further surgical intervention.

References

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