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A METHOD FOR THE TREATMENT OF HUMERUS FRACTURES IN THE NEWBORN USING THE S. von ROSEN SPLINT

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Peripheral fractures in the neonatal period are almost always complications of the delivery. Fractures of the clavicle and humerus are the most common followed by femur fractures and very occasionally epiphyseal dislocation of the humerus and femur or lower leg fractures.

These fractures are not of the greenstick type, and the deformities are often severe. Healing takes place rapidly with good callus formation. Significant malalignment can be corrected during healing; an angle of up to 40-50 per cent in a humerus may be reduced later (4).

Many consider that even unreduced fractures in the newborn heal with good results. This is however not entirely true; *Madsen* (2) who followed up a large series in Copenhagen found that despite adequate healing there were shortening and rotation deformities in several cases which could even be demonstrated 30 years later.

There is no reason why adequate correction of the fracture should not be undertaken from the beginning to avoid these complications. Splinting gives good immobilization but must usually be combined with traction to give a good position (2). The problem here is often how to hold the child against the pull of the traction. *Watson-Jones'* (4) "frame" with a loop over the infant's body is satisfactory for femur fractures but humerus fractures still present a problem.

The author has obtained good results, in 5 cases, by using the splint described by *S. von Rosen* (3) for the treatment of congenital dislocation of the hip joint. This can in turn be fixed to the bed and the infant is thus held in position (Figures 1 and 2). A great advantage of this

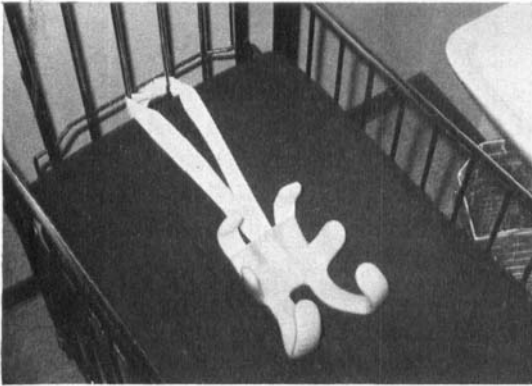


Figure 1. S. von Rosen splint fixed to the bed with a sling.



Figure 2. Child with bilateral fractures of the humerus held in traction with the aid of S. von Rosen splint.

technique is that nursing is relatively easy; the changing of nappies, for instance, can be carried out without interfering with the traction.

The traction is applied to the wrists over a foam rubber gauntlet; variable loads—usually 50–100 cc water in a plastic bag—can then be applied in the usual way over a pulley, as necessary in order to correct the deformity. Lateral traction is occasionally performed but then control is more difficult. Better and more natural is the direct distal pull (Figure 2) analogous with the treatment of adult fractures with “hanging casts”.

Flexion at the elbow has been suggested to prevent rotation deformities, but in this technique the natural and correct position is automatically obtained due to the free rotation of the traction at the wrist.

A further advantage of this technique is that X-ray control may easily be performed and should be undertaken at short intervals, due to the rapid rate at which healing takes place. Humerus fractures are stable after 10–14 days.

SUMMARY

Fractures of the humerus in the neonatal period are not of the greenstick type and malalignment is often considerable. Although corrections are easily performed during the healing period, a good position should be sought from the beginning. Traction is preferred to splinting, but it is often difficult to hold the child against the pull of the traction. Most of the previously described techniques are complicated and uncomfortable for the child. A technique is described here whereby the child is held in a von Rosen splint;¹ this enables simple correction of the deformity while at the same time permitting extremely easy nursing and X-ray control, as necessary.

REFERENCES

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4. Watson-Jones, R. (1952) *Fractures and joint injuries*. E. & S. Livingstone Ltd., Edinburgh and London.

¹ S. von Rosen splint is made in the Orthopaedic Department, Malmö General Hospital, and also by Zimmer Orthopaedic Ltd., Bridgend, Glam., Wales.