

# An Abduction Splint For Congenital Dysplasia

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Recently there has been cause to depart from the conventional splints applied in certain cases of congenital dysplasia of the hip. This report presents the advantages for the use of a new Abduction Splint in certain cases of congenital dislocated hip where abduction is desired.

Of the existing splints used, the majority require periodic removal for reasons such as cutaneous inflammations, body overgrowth, and the necessity of clearer X-rays. Such removal may allow a femoral head displacement.

This Abduction Splint,<sup>1</sup> made of an acrylic plastic material which weighs about one pound, has several obvious advantages. It is nonporous, non-toxic, non-absorbent, and the patient can be bathed while in it. After drying, it remains clean and moisture resistant, whereas patients in plaster splints are problems because of cutaneous inflammation caused by saturation of the plaster with urine. Once abduction is secured with this splint, it can remain relatively uninterrupted until acetabular development is complete enough to allow removal.

Clear X-rays can be made while wearing this because of its radio-lucency; and roentgenograms, such as those presented here, illustrate this point well and show the hip in a good abducted position. This is important as the plaster counter-parts have, in cases, often been broken down and position lost by very active patients.

The Abduction Splint is easier to fit directly than most metal and leather splints, and any item of clothing may be worn during use. (Fig. 1).

## Case Reports

*Case 1:* D. F., age 16 months in December, 1955. Classical signs of subluxation of the left hip joint were present, and the acetabular index on the left was 43. The epiphyseal center for the left femoral head was displaced 1 cm. laterally from the normal position. The right acetabular index was 22 with no subluxation. Under anesthesia the left hip was reduced and held in a plaster spica. Over a period of the next few weeks skin irritation due to urinary saturation became severe. The cast had to

1. Fuzere Abduction Splint.

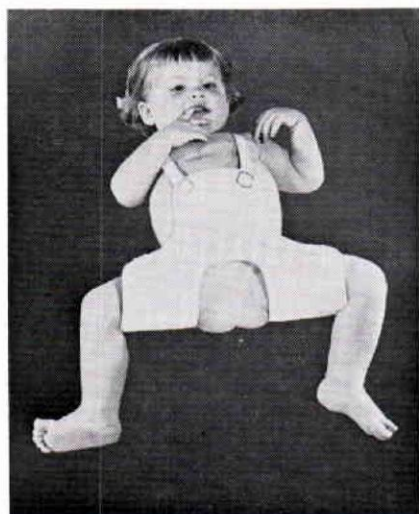


Fig. 1—The Fuzere Abduction Splint for treatment of certain cases of congenital dysplasia of the hip or hips.

be removed; and it was necessary to use, without concern for the hip, supportive therapy to clear the skin. An attempt was then made to hold the hip with a Frejka pillow splint but was not successful. A plastic abduction splint was applied after the hip was again reduced with anesthesia. Satisfactory position was maintained for seven months, after which the left acetabular index, was 27 with a femoral head noted to be developing normally within the acetabulum. The child last seen January, 1958. A full range of motion, normal stability, and absence of limp was noted in each hip.

*Case 2:* R. B., was born September, 1957 and seen at age three months. X-rays and signs indicated the presence of bilateral subluxation of the hips. The acetabular indices measured 45, left; 35, right. A closed reduction without anesthesia, was done in office and a spica cast applied. X-rays showed good position. At the follow-up visit, January, 1958, the cast was completely urine-soaked, and had an intolerable odor of ammonia; early pustular breakdown of skin around perineum and anus was found. The cast was removed and again, an attempt was made to maintain position of the hips with pillow splint while a plastic splint was being made;<sup>2</sup> however, it was necessary to re-reduce the hips when the splint was applied. The splint was left on until August, 1958 when the acetabular indices measured within normal limits, and the hips were clinically stable. This case was last seen in May, 1959; she walked normally without any limp or evidence of instability and had full range of motion in both hips.

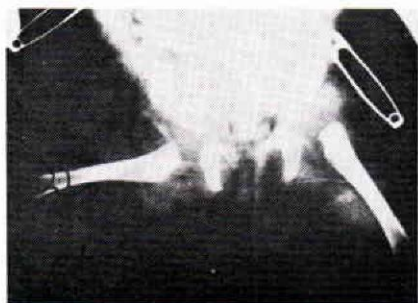


Fig. 2—Patient prior to use of Abduction Splint.

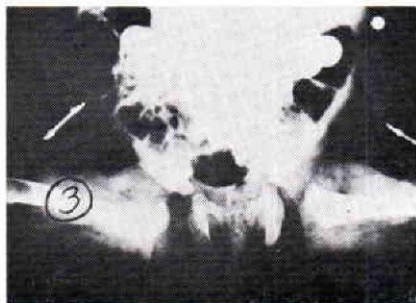


Fig. 3—Patient after placement of Abduction Splint.

### Summary

Several succeeding cases have been successful; and it is felt that early diagnosis, followed by the immediate application and continued use of the Abduction Splint produces good results in certain cases of Congenital Dysplasia of the hips or hip. In these cases the use of thin splints is superior to older techniques. It is easier to apply and the subsequent nursing care is much simpler.

2. Waiting periods are no longer necessary, as splints are now in production.