Acta orthop. scand. 47, 419–422, 1976

CONGENITAL BIFID FEMUR

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Two identical and unusual cases of congenital bifid femur are described. Both cases were successfully rehabilitated after simple surgery and the fitting of a suitable prosthesis. The patients are now able to walk without any form of external support.

Key words: femur; abnormality

Accepted 10.ii.76

There have been several reports of congenital anomalies of the femur in recent years. Almost all of these have dealt with congenital coxa vara, proximal femoral phocomelia and congenital bowing of the femur. As far as we know there have been only two reports of congenital bifid femur in the medical literature (Morris 1958, Cornah & Dangerfield 1974). In this article we describe two cases of congenital bifid femur which were rehabilitated after surgery.

CASE REPORTS

Case 1.

G.M.R., a 9-year-old male orphan, was admitted to Shafa Rehabilitation Hospital in September 1971 with congenital deformities of the right lower limb, the left foot and the right hand. He was unable to supply any information regarding his past or his family history. The child has a normal level of intelligence, and the following physical anomalies were noted:

Right lower limb. The distal end of the thigh was widened and of triangular appearance; palpation revealed the distal part of the femur to be bifurcated. The terminal portion of the medial branch was easily felt under the skin. The lateral branch articulated with a fibula suggesting some form of knee joint. There was a flexion contracture of 120° at the articulation. The range of motion of this joint was 20° (from 30° to 50°) and was painless. The distal end of the fibula articulated with a rudimentary foot which possessed only the lateral three rays. The right hip joint was normal.

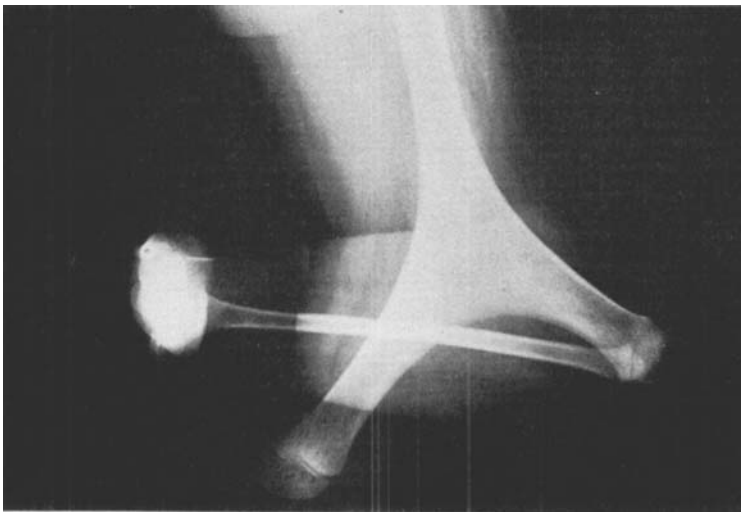
Left foot. This was plantigrade and had six toes, the extra toe representing a rudimentary great toe. The patient walked well on this foot, using one crutch. He ambulated also without support by walking on his knees.

Right hand. This hand had a lobster-claw deformity; it had good sensation and the child could grasp objects very well.

The physical examination was otherwise normal. Routine laboratory tests and chest roentgenogram were normal.

Case 2.

An 18-year-old male was admitted to Shafa Rehabilitation Hospital in July 1974 with congenital deformities of the right lower limb and the left foot. His mother stated that his gestation and delivery were normal; she had not taken any drugs during pregnancy and there were no similar deformities in the family. The following physical abnormalities were noted during the examination: The right lower limb and thigh exhibited exactly the same deformity as in case 1. The knee joint was formed between the lateral branch of the bifid femur and the fibula, identical to that seen in the first case. The rudimentary foot, however, had only two lateral rays, as opposed to three in the first case. The hip joint and proximal femur were normal.



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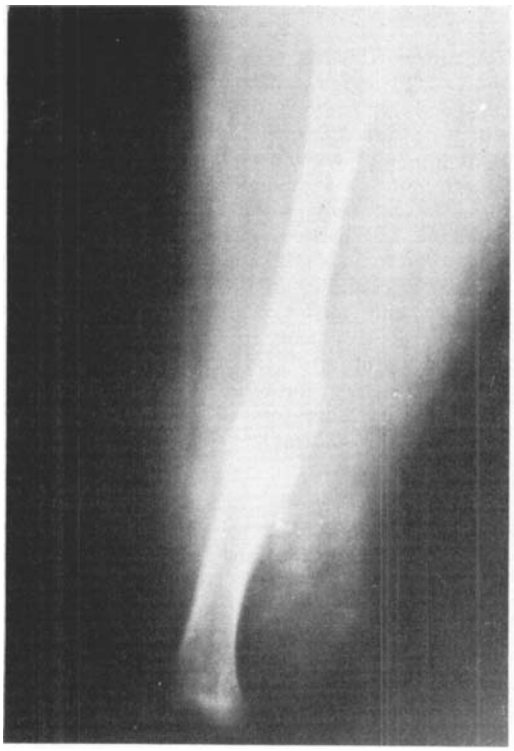

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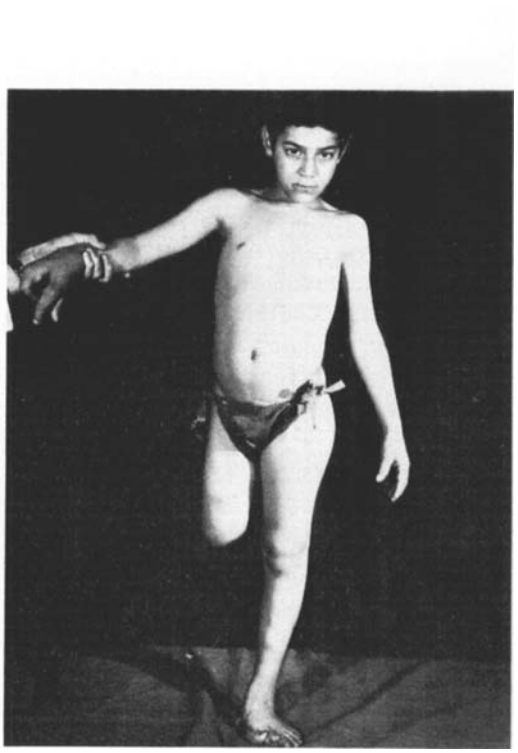

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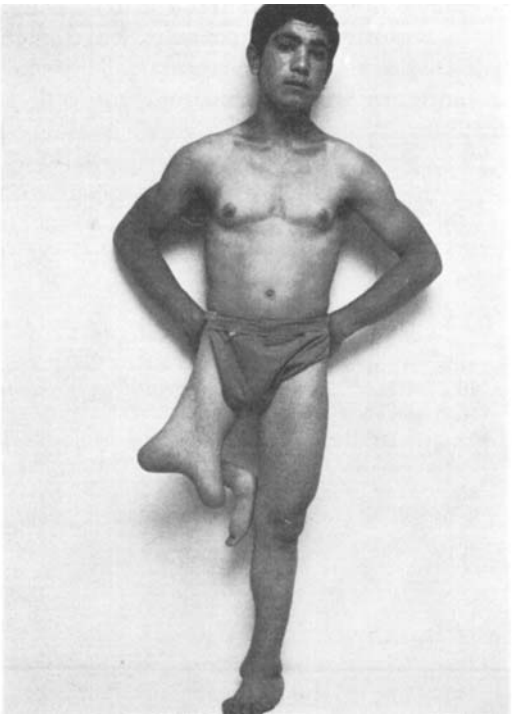
Figure 1. Case 1. A. Roentgenogram of the right femur before surgery. B. Roentgenogram of the right femur after surgery. C. The patient after surgery.

The left foot. This showed absence of the first ray with a small digit, in place of the hallux, which was attached on the medial side of the foot and was without any voluntary movement. The foot was otherwise plantigrade.

The rest of the physical examination was normal. The mode of locomotion of this patient was identical to the first case.

In both cases surgery was performed on the bifid femur, in order to fit a suitable artificial



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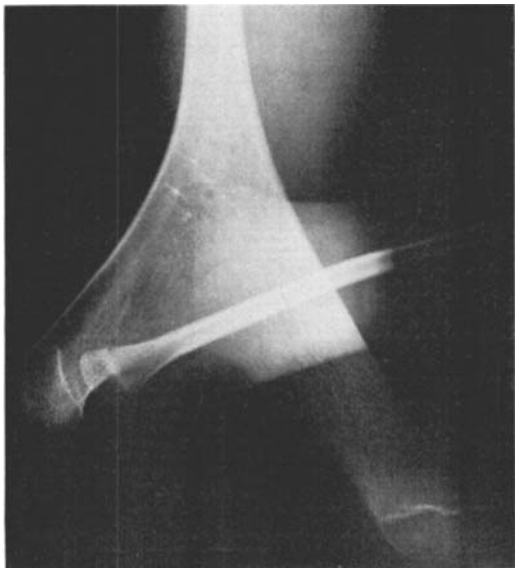

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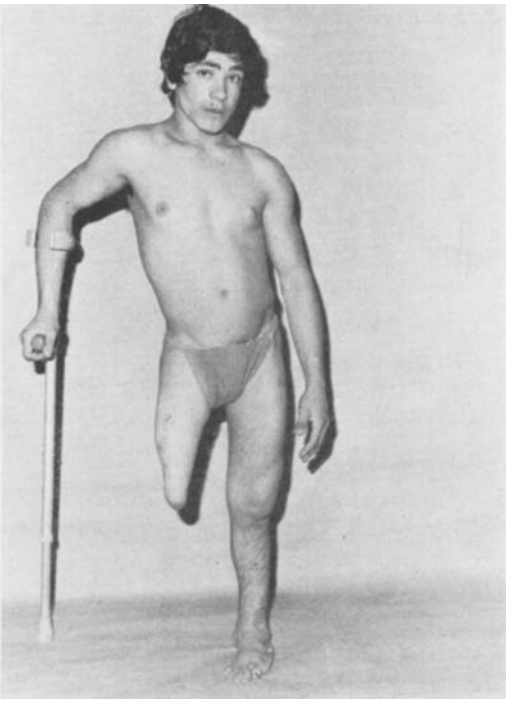
Figure 2. Case 2. A. The patient before surgery. B. Roentgenogram of the right femur before surgery. C. The patient after surgery.



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leg of the knee disarticulation type, and thus save the distal femoral epiphysis and allow for further growth. In both cases the results were gratifying.

Operative findings

In both cases the findings were the same. There was no intramedullary canal at the level of bifurcation; the femur was flattened, the

width being about one third to one fourth the transverse diameter of the femur.

TREATMENT AND RESULTS

In both cases the lateral branch of the femur (the part articulating with the fibula) was resected at the level of the bifurcation. An osteotomy was performed at this level on the medial fork and this portion was realigned with the shaft of the main bone. The osteotomy was secured by means of a wire suture and a Kirschner wire. The stump was immobilized in a plaster of Paris spica. The Kirschner wire was removed at the end of 3 weeks, and the spica at 12 weeks postoperatively when radiological and clinical union had occurred at the site of the osteotomy. Both patients have been fitted with a knee disarticulation prothesis and are walking without the aid of crutches. No treatment was considered necessary for the so-called normal foot since this was asymptomatic and plantigrade.

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