

CONGENITAL PSEUDARTHROSIS OF THE CLAVICLE

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Congenital pseudarthrosis of the clavicle is a rare entity. Since it was first described by Fitzwilliams (1910) in his series of craniocleido dysostosis, several authors have reported it (Saint Pierre 1930, Carpenter and Garret 1960, Stevenson 1962). Aldred (1963) described a series of 9 cases of congenital pseudo-arthrosis of clavicle, stressing on the development and treatment. Robert Owen (1970) while presenting 33 cases, favoured excision and bone grafting as the method of treatment. A case is being reported here in view of the rarity of the lesion.

CASE NOTES

Usha a girl aged 9 years, was admitted in the M. N. Orthopaedic Hospital, Madras, with the complaint of a swelling over the right clavicle, which was first seen at the age of 2 years. There was no history of birth injury or any subsequent trauma. It remained completely asymptomatic. The patient had two siblings, but no other member of the family had any bony abnormality.

A bony swelling 2 cms \times 1 cm was palpable at the junction of the middle and outer third of the right clavicle with slight abnormal mobility at that site. There was no tenderness or any signs of inflammation. Examination revealed full painless range

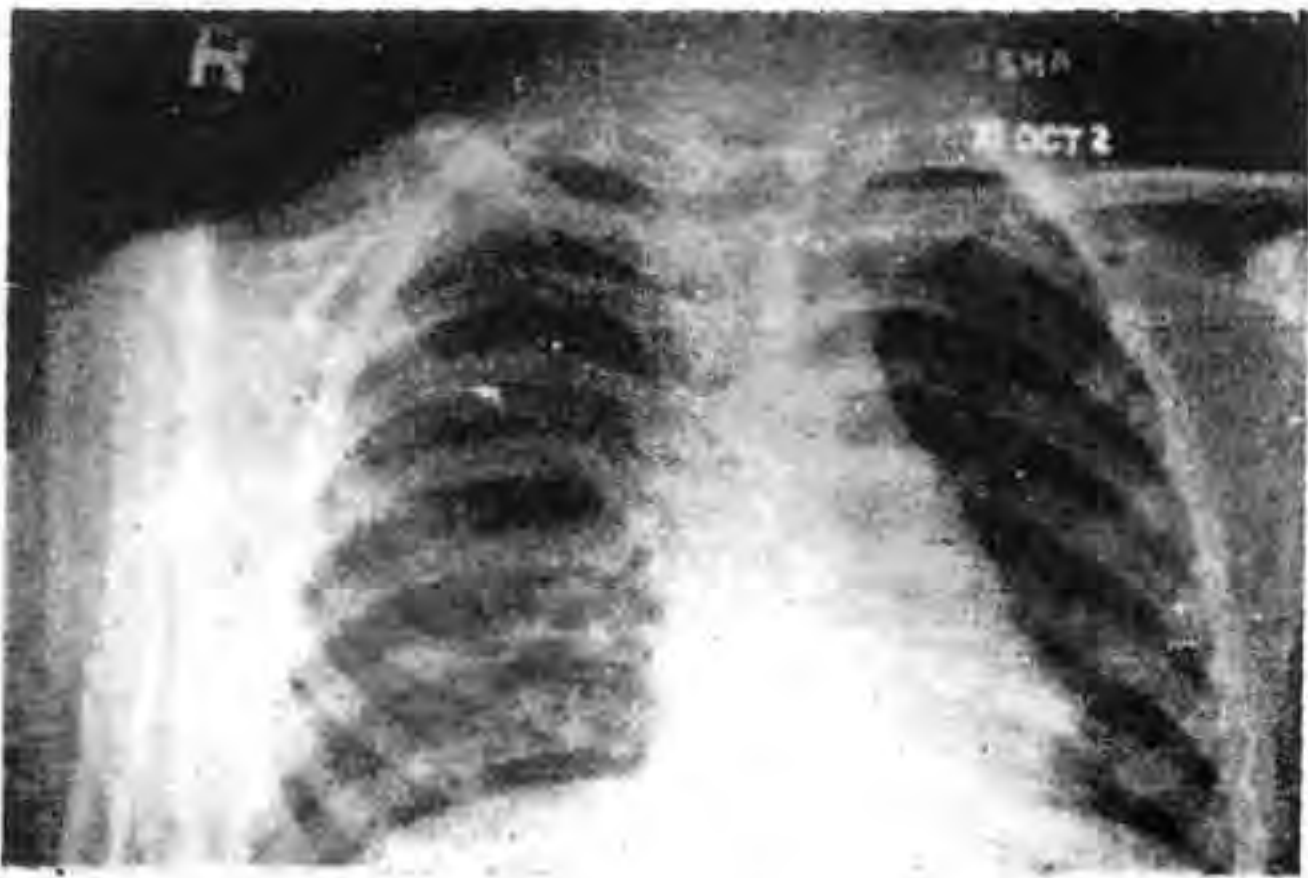


Fig. 1. Radiograph showing pseudarthrosis of the right clavicle.

of motion of the right shoulder without any drooping. There was no neuro-vascular deficit in the right upper limb. The left clavicle was found normal. The skull, limb bones, and trunk showed no abnormality. Radiograph revealed a defect with either ends sclerosed, at the junction of the outer third and inner two thirds of the right clavicle. There was no tapering of the bone ends or evidence of reactive bone. The sternal fragment was larger, lying in front of and slightly above the shorter acromial fragment (Fig. 1).

Treatment : The surgical treatment done was excision of the pseudarthrosis, resection of the bone ends back to normal medullary canal, stabilisation of the remaining fragments with an intra-medullary Kirschner wire, filling the defect with autogenous iliac bone graft and external immobilisation with a figure of 8 bandage (Fig. 2). The

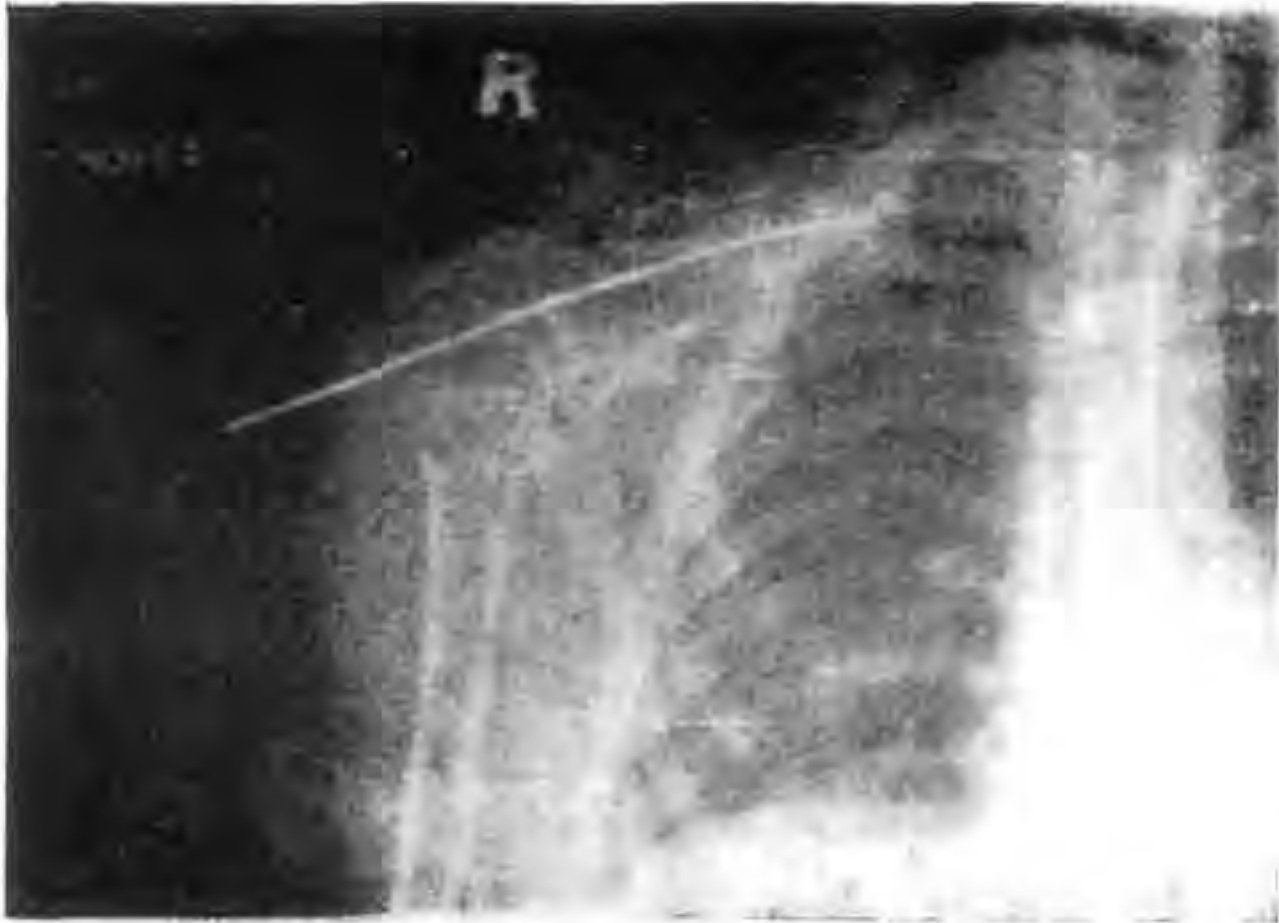


Fig. 2. Immediate postoperative radiograph.

intra—medullary wire was removed 3 weeks later as it was loose. The wound healed well. In 3 months time, the pseudarthrosis had healed, but there was a small thickening at the site of the lesion (Fig. 3). There were no abnormal movements or tenderness and the shoulder movements were full and free.

Histopathology : Densely hyalinised fibrous tissue arranged in irregular bundles with cartilage cells in groups of twos and fours. A few congested capillaries were present. No evidence of fibrous dysplasia or neurofibromatosis was made out.

COMMENTS

The normal ossification of the clavicle has been debated by anatomists for many years. At the 11 mm stage of development of the embryo, the clavicle consists entirely of connective tissue. During the 17 mm stage, 2 separate masses of precartilage

are present and a separate centre of ossification is evident in each mass precartilage. During the 19 mm stage, the 2 centres ossify independently and an extension takes place in the bridge of precartilaginous tissue which unites the 2 main masses of precartilage. Non-ossification of the precartilaginous bridge connecting the sternal and acromial fragments is said to result in pseudarthrosis.



Fig. 3. Radiograph showing good healing after 3 months of operative treatment.

Differential Diagnosis : (1) *Cranio cleido dysostosis* has a strong familial tendency being transmitted as an autosomal dominant characteristic. The clavicular defect is bilateral and there are other obvious stigmata such as wide fontanelles and suture lines.

(2) Majority of the *obstetric fractures of the clavicle* are of the greenstick type and they all unite very rapidly. Traumatic fracture of the clavicle in children may occasionally end in pseudarthrosis with exuberant callus.

SUMMARY

A rare case of congenital pseudarthrosis of the clavicle in a girl, treated successfully by excision and bone grafting has been reported.

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