HYPERPLASTIC CALLUS IN OSTEOGENESIS IMPERFECTA

Report of a Case

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Hyperplastic callus in osteogenesis imperfecta is rare. The present case is added to the few previously recorded (Brailsford 1943, Baker 1946, Fairbank and Baker 1948) because it illustrates radiographically the development of the condition. An additional point of interest is the occurrence of a fracture of another bone during treatment, without the formation of hyperplastic callus.

The patient, a girl, was born in 1932 and had had many fractures, the first at the age of nine months. It was difficult to obtain a clear history of these fractures because many occurred without violence. It is certain that there had been three fractures of the thighs and three of the legs. Her forearms were obviously deformed, but there was no history of fracture. There was no relevant family history.

She was first seen by the writer in April 1949, when she was able to walk with two above-knee calipers and crutches. She used the crutches synchronously and swung her body and legs forwards between them. At this time she presented, clinically and radiologically, the typical features of osteogenesis imperfecta of the slender fragile bone type—Fairbank’s Type 2 (1948) (Figs. 1, 3 and 8). Her sclerae were not blue.

Early in May 1950, without any injury, the patient’s right thigh gradually became painful. The pain increased slowly, became throbbing in character, unremitting, and worse at night. She noticed some generalised swelling of her thigh about three weeks later and soon afterwards began to feel unwell and avoided taking weight on the leg. The swelling became sufficient to prevent her from applying her caliper.

Examination—When examined five weeks after the onset of symptoms she looked ill and frightened and had a temperature of 102 degrees Fahrenheit. There was a hot, tender, painful swelling of the lower two-thirds of the right thigh. It was a large, ill-defined swelling, hard and attached to bone; the skin over it was red and shiny, but mobile. She was unable to contract the quadriceps and the knee had a range of only 5 degrees of movement, from 175 to 170 degrees. (Her previous range had been from 175 to 150 degrees.) Normal fluid was aspirated from the joint. The blood picture also was normal. Radiographic examination showed a vague shadow in the lower third of the thigh (Fig. 3) as compared with a radiograph of the same area (Fig. 2) taken some years previously. As in other reported cases, the possible diagnosis of sarcoma or of acute osteomyelitis was considered.

Fig. 1

Photograph of the patient at the age of eighteen years, showing multiple deformities. Note the great enlargement of the right thigh.
Figure 2—Right femur at the age of ten years. This radiograph is reproduced for comparison with the other illustrations on this page, which show the evolution of a mass of hyperplastic callus around the lower end of the femur without evident fracture. Figure 3—At age of eighteen years, four weeks after onset of symptoms. Figure 4—Six weeks after onset of symptoms.

Figure 5—Seven weeks after onset of symptoms. Figure 6—Nine weeks after onset. Figure 7—Seven months after onset.
Progress—The limb was rested on a back splint and became slowly more comfortable within a few days. The redness and warmth of the skin disappeared in about six weeks, but some pain persisted for three or four months. A radiograph taken six weeks after the onset of symptoms (Fig. 4) made the diagnosis clear. This and the following series of films (Figs. 5 to 7) showed the development of a large mass of calcification of bizarre, almost butterfly, shape about the lower end of the femur. This mass gradually became more sharply defined. In no film was there evidence of recent fracture of the lower end of the femur. The knee regained its previous range of movement.

A later fracture—During August 1950, while the hyperplastic callus was under observation, the patient fell out of a chair and sustained a fracture of the lower end of the right tibia and fibula with some displacement (Fig. 8). This fracture united without excessive callus (Fig. 9).

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REFERENCES


