SUBPERIOSTEAL HAEMATOMA OF THE TIBIA

Report of a Case

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A boy of three attended in 1961 on account of overgrowth of the left lower leg. The affected limb was three centimetres longer than the normal limb. The thighs were equal. Radiographs showed only slight abnormalities, with bowing of the tibia (Fig. 1). Full investigations failed to establish a diagnosis. Two years later the boy was admitted with a swelling on the left tibia. The swelling had appeared suddenly and was not painful on palpation. The circumference of the right lower leg was 20 centimetres and of the left lower leg 24·5 centimetres.

At operation in March 1963 the tumour was removed. It consisted of brittle bone lying under the periosteum of the tibia and it looked like callus.

When the boy was seven the upper epiphysis of the tibia was stapled. Later in the same year he was admitted for an enormous swelling of the lower leg. He was said to have bumped his leg some days before. The swelling was aspirated but only 50 millilitres of blood and clot
could be drawn off. Four weeks later a large subperiosteal calcifying haematoma was shown radiographically (Fig. 2). Six months later the calcified haematoma was ossified. The original cortex on the medial side of the tibia had largely disappeared (Fig. 3). At this time the length of the right lower limb was 68 centimetres and the left 72 centimetres, the lengthening being below the knee. There was no discoloration or oedema of the lower leg. The subcutaneous tissue was rubbery to the touch. The temperature of the skin was normal. The appearance of the leg is shown in Figure 5.

The patient later returned two weeks after a further accident. He had again developed an enormous swelling, and radiographs showed a calcifying haematoma superimposed on the earlier ossified mass (Fig. 4).

A year later the patient was seen again. The lower leg showed no fresh sign of a further haematoma, discoloration or oedema. There was no bruit. There was no evidence of fragilitas ossium. The length and circumference of the thighs were equal. The lower legs showed a difference of six centimetres in circumference. The fore part of the left foot was normal, without any rubbery subcutaneous tissue. The patient walked with a raised shoe on the right. A plastic sheath was made around the lower leg to prevent bleeding from injury.

The blood group was O rhesus positive. Haemoglobin was 87 per cent; leucocytes 6,200. The alkaline phosphatase was normal. Bleeding time 1 minute 15 seconds; coagulation time 10 minutes 11 seconds. The glucose tolerance test was 87-137-115-95-105-110 milligrams per cent.

Arteriographs of the left leg showed the formation of new arteries round the thickened tibia, without increase in the calibre of the vessels. There was no pool formation and no venous reflux after 18 seconds. The lymphangiograph was unsuccessful. Biopsy of the thickened bone and overlying tissues showed normal periosteum covered by fibrous subcutaneous fatty tissue. The bone was composed of small, strong trabeculae, partly of lamellar bone tissue and partly of woven bone. The trabeculae were covered almost everywhere with osteoblasts, and often showed a thin layer of osteoid tissue. The osteocyes were situated in wide lacunae. Locally some cartilage was observed, with signs of endochondral ossification. The marrow spaces were filled with a loosely meshed mesenchymal tissue containing numerous thin-walled vessels. At various points in this mesenchymal tissue small areas of osteoid were found. Histologically the tissue resembled callus.

An enquiry into the family history as far back as the patient’s great-grandparents showed that no important abnormality had occurred. A cousin on the father’s side had died of leukaemia at the age of fourteen and a cousin of sixteen (son of the father’s sister) had had his spleen removed on account of haemolytic jaundice. There was no evidence either in the patient or in his family to suggest Klippel-Trelauay-Parkes-Weber syndrome, Mafucci’s syndrome, Sturge-Weber syndrome, the syndrome of inborn lymphangiomata, Camurati-Engelmann syndrome or Caffey-Silverman syndrome.

**SUMMARY**

1. An unexplained case of extensive subperiosteal haematoma of the tibia is reported.
2. The radiological and biochemical findings are described.