

METABOLIC BONE DISEASE

Rickets

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In rickets, the primary problem is inadequate mineralisation of growing bone (Table 44.5). In severe cases the classic radiographic features are seen at all physes with significant deformity (Figure 44.11). Medical treatment improves mineralisation and deformity corrects with growth. Once the medical condition has stabilised, surgery may be indicated to treat residual limb deformity . Guided growth techniques are often used in preference to osteotomies. Burrill Bernard Crohn , 1884–1983, gastroenterologist, Mount Sinai Hospital, New York, NY , USA, described regional ileitis in 1932.

TABLE 44.5 Common causes of rickets.

Nutritional	Reduced intake of vitamin D and calcium
Environmental	Inadequate exposure to sunlight
Gastrointestinal	Crohn's disease, gluten-sensitive enteropathy
disease	Genetic X-linked hypophosphataemia (excess

FGF23 production) Renal disease
End-stage renal failure, renal
tubular anomalies Secondary
hyperparathyroidism may be
present Figure 44.10 Standing leg
length/alignment radiograph of a
child with polyostotic fibrous
dysplasia. The diaphyseal lesions
have a 'ground

glass' appearance. The bones are often deformed and the limb may be short, as seen on the right. The femur has fractured previously and one intramedullary nail remains in place. Figure 44.11 Radiographs in cases of rickets demonstrate widened physes with cupped, flared metaphyses.

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