Cortical bone cyst following a greenstick radial fracture

A R Wass, J P Sloan

Abstract
There are only a few reports of well defined cystic lesions of the peripheral skeleton following fracture. In children, these lesions are mostly small cortical defects affecting the distal radial metaphysis after a greenstick or torus fracture. A cyst is reported complicating a greenstick fracture, together with a brief review of published reports confirming that these are asymptomatic lesions which can be managed conservatively without further investigation. (J Accid Emerg Med 1996;13:63–64)

Key terms: cortical bone cyst; greenstick fracture.

Case report
A 9 year old girl presented with a painful left wrist after a fall. Ten months previously she had fractured the distal end of the left radius (fig 1) and had made a full functional recovery. Clinical examination suggested further bony injury but radiographs revealed a cystic lesion in the distal radius, adjacent to the healed fracture (fig 2). A bone scan was "cold" at the site of the cyst. The symptoms settled quickly and the patient remained asymptomatic at follow up.
Discussion

Greenstick or torus fractures are common injuries in children. They usually heal after a brief period of immobilisation with complete functional recovery. The development of cysts adjacent to such fractures has occasionally been reported. A review of the English language reports identified 17 similar cases, 15 involving the distal radial metaphysis. The incidence of these postfracture cysts is unknown. They are probably more common than the published reports would suggest since most distal radius fractures in children are monitored on clinical signs alone.

In all previously reported cases the postfracture cortical cysts were asymptomatic. These cysts are discovered either during radiological follow up of a fracture or after reinjury of the same limb (as in this case). They usually appear more than one month after the fracture. Characteristically the cysts are less than 10 mm in diameter, do not expand, appear rounded or slightly oval shaped, and may be multiple. Healing of the initial fracture is not affected by these cysts, nor do they predispose to pathological fractures. Pfister-Goedeke and Braune reported spontaneous resolution in three out of nine cases (33%) at 3 years.

There is debate about the aetiology of these cysts. Pfister-Goedeke and Braune suggested that they are resorption cysts within an excessive periosteal reaction, related to the subperiosteal haematoma that accompanies greenstick fractures. Phillips and Keats attribute post-traumatic cysts to the resorption of intraosseous haemorrhage. Malghem et al reported that computed tomographic scanning of two cases showed a density consistent with a fatty content. They postulated that this fat resulted from the inclusion of medullary fat within the subperiosteal haematoma. This theory of transcortical escape of intramedullary fat is supported by Davids et al, who showed fat within a postfracture cortical cyst on magnetic resonance imaging. Uncertainty about the aetiology of these lesions is likely to continue as long as their histological nature remains unknown. However, to date, biopsy of these lesions has never been clinically justified in view of their asymptomatic nature.

These small asymptomatic postfracture cortical cysts are invariably incidental x-ray findings and of little clinical importance. Failure to recognise this apparently rare complication of minor fractures in children may cause confusion for the clinician and unnecessary concern for parents. Expensive diagnostic investigation or operative intervention are not indicated in these cysts. We advocate review after 6 to 12 months to ensure that the lesion remains asymptomatic.

Two cases of paraduodenal hernia, a rare internal hernia

Thomas McDonagh, George A Jelinek

Abstract

Paraduodenal hernia is a rare congenital internal hernia which arises from an error of rotation of the midgut with entrapment of the small intestine beneath the developing colon. It is important as it usually presents as intestinal obstruction, and before laparotomy is often misdiagnosed. Mortality increases significantly with delays in surgical treatment. Two cases

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