is often a family history of similar masses. Radiographically, the lesion appears as a well-demarcated mass of lobulated, round or oval calcifications in the periarticular soft tissues. No bony abnormalities are seen and the joint space is not involved. Hyperphosphataemia is the only biochemical abnormality which has been detected (Reddy and Rao 1964; Lafferty, Reynolds and Pearson 1965; Baldursson et al 1969). Treatments have included excision, radiotherapy (Inclan 1943), special diets and various oral and parenteral drugs including corticosteroids and ACTH (Scott and DeLilly 1954). None has proved curative but there have been good results from early excision of initial and recurrent lesions.

The clinical and histological features are not always so typical. The histological appearance of our case represents a variant of tumour calcinosis; the calcification is relatively mild and much of the tumour consists of macrophages and an osteoclast-like or giant-cell reaction to the psammoma bodies which are composed of amorphous material.

Confirmation of the diagnosis may be difficult because of the wide range of radiological and histological features. The radiographic appearance may arouse concern that there has been malignant change within a benign lesion, but careful histological analysis can usually reassure the patient and the surgeon that the lesion is innocent.

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CHRONIC RECURRENT MULTIFOCAL OSTEOMYELITIS ASSOCIATED WITH TUMORAL CALCINOSIS

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Chronic recurrent multifocal osteomyelitis (CRMO) has been reported in association with various lesions and diseases. This is believed to be the first report of the combination of CRMO with tumoral calcinosis.

Case report. A 13-year-old white Jordanian schoolgirl developed a large swelling at the right elbow over a period of one year, but there had been no recent change in its size. The patient was generally well and afebrile. The firm, well-defined swelling was painless and not tender, measuring 12 x 22 cm (Fig. 1). It restricted elbow movement to 35° to 110°. Radiographs (Fig. 2) and CT scans showed lobulated calcification in the soft tissues not affecting the bone cortices.

The patient was a known case of CRMO, having had six incision operations and drainage for lesions in both femora and both tibiae between the ages of five and seven years. Her paternal cousin, five years older, was also a known case of CRMO. From the age of 7 to 11 years the

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Fig. 1
patient had had transient and recurrent painful hot swellings in her lower limbs which had responded to antibiotics without the need for hospital admission.

At the age of 11 years she developed a swelling over the body of the left mandible. It was firm, 2 × 2 cm, moderately tender, but neither red nor hot, with no lymph-node swelling. She also had a similar swelling over the right tibia.

Radiographs of the mandible were normal, but an isotope scan showed increased uptake in the whole bone, and an aspiration needle biopsy was compatible with low-grade osteomyelitis. The swellings settled with a ten-day course of intravenous clindamycin and the patient was lost to follow-up until she presented two years later with the elbow swelling. The mandibular and tibial swellings had disappeared.

On admission with the elbow swelling, Hb was 11.9 g/100 ml, ESR 72 mm/hr, serum calcium 2.6 mmol/l (normal 2.2 to 2.6), serum phosphorus 2.3 mmol/l (normal 0.8 to 1.4) and serum alkaline phosphatase 169 U/l (normal 30 to 85). The sickling test was negative, and haemoglobin electrophoresis was normal. Her total T cells, T-cell subsets, total B cells and monocytes were all normal. Immunoglobulin electrophoresis showed elevated IgG and IgM levels, while IgA, C3 and C4 levels were normal.

Protein electrophoresis showed a low serum albumin of 37.8 g/l (normal 52 to 69) and raised globulin levels: alpha 2 was 16.6 g/l (normal 4.8 to 12.1), beta, 17.3 g/l (normal 7.6 to 15.9) and gamma was 26.5 g/l (8.8 to 22.6), while alpha-1 globulin was normal at 1.8 g/l (normal 1.1 to 4.8). The albumin/globulin ratio was 0.6 and the PPD test for tuberculosis was negative, as were Brucella tests.

Aspiration needle biopsy from the elbow swelling yielded thick milky fluid containing abundant granular hyaline and calcific material with spherical calcific bodies. Scattered single and multinucleated cells appeared to be synovial in origin. Culture for aerobic and anaerobic organisms and for acid-fast bacilli was negative.

At operation, the major portion of the lobulated, encapsulated swelling was removed en bloc (Fig. 3) from deep to the brachialis, and two other smaller portions were excised from under pronator teres. The masses contained caseous material. Recovery was uneventful, with restoration of full elbow movements in two months.

Histological examination showed large irregular granular and flaky calcium deposits surrounded by a chronic inflammatory and foreign-body reaction. There was dense fibrosis between the deposits and the histological diagnosis was tumoral calcinosis.

**Discussion.** Tumoral calcinosis is a rare, benign and painless lesion of unknown aetiology which affects mainly black patients. It is usually found near the large joints of the lower extremities and may have a familial incidence (Steinherz et al 1985). It is often associated with hyperphosphataemia, probably caused by an inborn error.
of phosphate metabolism (Veress, Malik and El Hassan 1976). Some patients, however, have a normal serum phosphate level, which casts some doubt on the possible metabolic aetiology.

Chronic recurrent multifocal osteomyelitis (CRMO) is also of unknown aetiology. It is characterised by exacerbations and remissions resembling osteomyelitis at multiple sites but with non-specific inflammatory changes and failure to show growth of aerobic and anaerobic bacteria, mycobacteria, fungi or viruses in blood or bone (King et al 1987).

In our case the family history was positive; we have previously reported another family with three cases of CRMO (Majeed et al 1989). Both of these families showed the characteristic recurrent swellings, pathology suggestive of subacute osteomyelitis, and failure to isolate organisms.

In the patient with tumoral calcinosis, the history of six operations for presumed osteomyelitis in her lower limbs and an intact immune system is compatible with the diagnosis of CRMO. Associations with CRMO have been reported for palmoplantar pustulosis (Björkstén and Boquist 1980) and less frequently for psoriasis vulgaris (King et al 1987), Sweet syndrome (Majeed et al 1989) and congenital dyserythropoietic anaemia (Majeed et al 1989). To the best of our knowledge, this is the first report of the combination of CRMO and tumoral calcinosis in the same patient. Both conditions are rare and this combination may not be due to chance alone.

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CONTAINED RUPTURE OF AN ABDOMINAL AORTIC ANEURYSM

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We report a case of contained or sealed rupture of an aortic aneurysm which eroded a lumbar vertebra.

Case report. A 70-year-old man presented with severe pain in the abdomen and the right shoulder with dyspnœa. He had complained of intermittent low-back pain for 16 years. He looked pale, his blood pressure was 130/80 mmHg and his pulse rate was 64 per minute. The abdomen was rigid and tender to palpation in the epigastric area. No pulsatile mass was felt. The peripheral pulses were all palpable and the extremities showed no cyanosis, clubbing, or oedema. The tendon reflexes were all present and sensation was intact. Examination of the back indicated no abnormality except for flattening of the lumbar lordosis.

Laboratory examination showed an ESR of 86 mm after one hour, a haemoglobin level of 14.7 g/100 ml, a haematocrit value of 42.2% and a WBC of 6950/µl with a normal differential count. The blood urea level was 75.5 mg/100 ml and the creatinine level 1.3 mg/100 ml. The serum electrolytes, calcium and phosphorus levels and protein electrophoresis were within normal limits. The lactate dehydrogenases were moderately elevated (699 U/l). Serological tests for syphilis and tuberculosis were negative.

A radiograph of the abdomen showed gas in the peritoneal cavity and a radiograph of the lumbosacral spine indicated generalised osteopenia but intact bone architecture and disc spaces. At laparotomy a perforated pyloric ulcer was found and further exploration revealed the presence of an aortic aneurysm. The perforated ulcer was sutured and the abdominal cavity was drained. CT of the abdomen and lumbar spine later revealed a destructive process involving the body of the third lumbar vertebra (Fig. 1) and a bone scan with 99mTc methylene diphosphonate revealed increased activity in the vertebra.

A second laparotomy was performed. With the aorta clamped, the dorsal wall of the aneurysm was resected to allow entry into the eroded vertebra. The vertebral body