Case reports

HUMERAL OSTEONECROSIS LEADING TO THE EARLY DETECTION OF A BRONCHIAL CARCINOMA

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The new Ionising Radiation (Medical Exposure) Regulations 2000 (IR (ME)ER) were implemented in January 2001. These regulations state that “the referrer must record in the patient's notes that a radiograph was taken and what it showed”. As a result it is now incumbent upon the orthopaedic surgeon to document formally the findings of all requested radiographs. We present a case in which a left upper bronchial carcinoma was detected initially on a radiograph of the left shoulder. It highlights the importance of careful examination of the entire radiographic image and the documenting of the findings.

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The principal focus of attention of orthopaedic surgeons when interpreting a radiograph is directed towards the bony architecture and immediate soft tissues. It is, however, incumbent upon us as clinicians to examine all of the information on the image and with the implementation of the Ionising Radiation (Medical Exposure) Regulations 2000, this now has medicolegal implications.^{1,2}

We present a case in which a bronchial carcinoma was identified initially on a shoulder radiograph and discuss the implications which these regulations will have on orthopaedic surgeons.

Case report

A 54-year-old man was referred to the orthopaedic outpatient clinic in July 2000 with a three-year history of increasing pain in both shoulders. Earlier radiographs had shown osteonecrosis of both humeral heads. They were repeated and showed progression of the osteonecrosis. In addition, the AP radiograph of the shoulder revealed a lesion in the upper lobe of the left lung (Figs 1 and 2). He was therefore sent for a formal chest radiograph and the lesion was reported as being suggestive of a bronchial carcinoma. The diagnosis was confirmed at bronchoscopy. He underwent a left upper lobectomy in November 2000 for a stage-one bronchogenic carcinoma. The resection was considered to be curative.

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The patient had been a lifelong asthmatic and had received repeated courses of systemic steroids since late adolescence. He had also smoked at least 20 cigarettes a day over the same period. In 1997 osteonecrosis of both femoral heads and the left knee had

Fig. 1

Radiograph of the shoulder which shows the bronchial lesion.

Fig. 2

Close-up of the lung field from the radiograph of the shoulder which shows the lesion (A) and collapse (B).

been diagnosed. Subsequently, he had undergone total arthroplasties of these joints.

Discussion

It is imperative to interpret all of the information available on any radiograph. This becomes even more important when radiographs are not formally reported, as is often the case within the Fracture Clinic. The onus is therefore on the orthopaedic surgeon to examine the entire image carefully.³

The new Ionising Radiation (Medical Exposure) Regulations 2000¹ which were implemented in January 2001, state that all radiographs must have a documented report within the patients' notes. This is now a legal requirement. The radiograph can be reported either by a radiologist or by the clinician who requested the radiograph. Orthopaedic surgeons will therefore often be solely responsible for documenting the findings of radiographs within the Fracture Clinic. It is obviously important that all abnormalities are detected on these radiographs. Lesions within the lung field which are seen on a shoulder radiograph are a good example of pathology which may be easily overlooked.

There are a few reports of the incidental finding of malignancies when using other imaging modalities,^{4,5} but we have

found no similar reports relating to orthopaedics. This case is an excellent example of the need for vigilance when appraising radiographs. It also serves to demonstrate the significant effect that incidental findings may have on the outcome for the patient. In this patient, a shoulder replacement may have resulted in a very poor outcome had the bronchial lesion not been treated first. Equally, there could have been serious medicolegal implications.

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AN UNUSUAL CASE OF A POSTOPERATIVE BONE CYST

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We describe an unusual case of a postoperative bone cyst resulting from a retained fragment of surgical glove. We highlight some of the problems associated with gloves and suggest ways of safeguarding against similar complications.

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Cystic changes in bone present a diagnostic challenge. In the postoperative setting, they often herald a serious complication such as infection or a reaction to foreign material such as silicone. We report a case of a solitary bone cyst which developed after Wilson's metatarsal osteotomy. It illustrates a potential and previously unreported complication relating to the use of surgical gloves and we suggest ways in which this may be avoided.

Case report

A 16-year-old girl presented with hallux valgus. Wilson's osteotomy was undertaken on the left foot, using multiple drill holes and an osteotome. Her immediate postoperative recovery was uneventful. Four weeks later, she complained of pain in the first metatarsal. Radiographs of the foot were normal, and the serum levels of inflammatory markers were within normal limits. The pain persisted and 18 months after the operation a repeat radiograph showed a bone cyst in the line of the healed osteotomy (Fig. 1). An isotope bone scan showed no increased uptake. Open exploration showed that the cavity of the cyst contained clear pale yellow fluid and fragments of surgical glove approximately 3 mm in diameter. After curettage and bone grafting (Fig. 2) she made a full and rapid recovery.

Analysis of the wall of the cyst and its contents revealed aseptic, chronic inflammation, and a small piece of non-refractive hyaline material. This was shown to be latex, presumably from a glove torn during the initial osteotomy.

Discussion

Bone cysts arising after an operation are uncommon. The most common cause is infection but they can also arise as a foreign-body reaction.¹ To our knowledge, there is only one previously reported case of a retained portion of a latex glove which acted as the focus for infection and formation of a secondary cyst.² In that patient a fragment of glove was found in an abscess complicating

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