The timing of revision will depend on the surgeon's awareness of the problem rather than the patient's symptoms.

**Introduction**

Although the clinical success of the operation of total hip arthroplasty can almost be taken for granted the need for revision surgery is not readily realized, appreciated or accepted. On what evidence can we base an assumption that an artificial joint will fare better or last longer than its real counterpart?

The timing of revision surgery must take into account the following: the patients known to be at risk for complications, the radiographic appearances indicating the likelihood of future failure, the asymptomatic nature of some of the complications, the frequent lack of correlation between radiographic appearances, clinical function and operative findings, the progressive nature of the complications, the progressive loss of bone stock and the mechanical effects of socket wear. The dilemma of radiological failure in the presence of clinical success need not exist if the possibility is appreciated both by the surgeon and the patient before the primary intervention.

**Problems to be Anticipated at Follow-up**

At the follow-up the most important factors for making the diagnosis and planning the management of complications are the continuity of the observer, his anticipation of the problem and good quality serial radiographs showing all of the prosthesis.

Examination of the range of movements of an artificial hip is a gesture more of social benefit than scientific interest. Although of clinical importance it must not override careful study of the radiographs.

**Deep Infection**

The patients at risk for a higher incidence of deep infection have been identified and include rheumatoid arthritis patients (especially if on steroids), males with post-operative urinary retention requiring catheterization and at times prostatectomy, patients who have had previous hip operations, diabetics and patients with psoriasis. The high risk of deep sepsis following cutaneous infection has been pointed out (Ainscow and Denham 1984). In this context, dental treatment does not seem to be a factor predisposing to deep infection. This may be because so
many of the patients have already lost their teeth by the time they come to total hip arthroplasty.

In the vast majority of cases deep sepsis will usually, if not invariably, be diagnosed within 1 year of surgery, provided carefully kept records and good quality serial radiographs showing the whole of the implant (Fig. 17.1) are available. Any suggestion of an imperfect result warrants a thorough examination and careful scrutiny of the radiographs.

Any of the following findings may indicate deep sepsis: periostitis near the tip of the stem, endosteal porosis, cavitation in any area (but usually near the tip of the stem), early demarcation of the socket, erosion of the inner layer of the stump of the medial femoral neck or unexpected trochanteric detachment (Fig. 17.2).

**Dislocation**

Shortening, malposition or malorientation of the components may be immediately obvious. Recurrent clicking may indicate subluxation which may lead to dislocation once the rim of the socket has been eroded.

**Fracture of the Stem**

Healthy, heavy (over 80 kg), active males with a unilateral hip problem or bilateral total hip arthroplasty and with excellent femoral cortex (which is a reflection of their function) often make a rapid post-operative recovery and very soon return to normal activities. In view of the spectacular clinical result, these patients may soon be "lost" to follow-up. This special group of patients must really be followed up indefinitely. The tell-tale signs of fracture of the stem can be seen around 1 year from surgery and include separation of the back of the stem from cement, absent or fragmented cement at the calcar and fracture of the cement at the tip of the stem or at any other level (Fig. 17.3). Endosteal cavitation of the shaft of the femur is rare within 1 year of surgery. Radiographic appearances described above were found in 77.2% of 120 cases of fracture of the stem. These changes, often in combination, were already present within one year of the primary hip replacement. In this group we must include patients who already have had a revision for a fractured stem where the medial femoral neck and the lesser trochanter have not been prepared properly.