Corrective osteotomies offer an effective means of managing problem cases following the operative and conservative treatment of femoral neck fractures, including nonunions and malunions [4–7]. While the frontal-plane valgus osteotomy, used by Pauwels to change shear forces into compressive forces, will promote the healing of virtually any nonunion [4], other options are available for the treatment of posttraumatic osteoarthritis of the hip and malunited fractures [1,7] (Fig. 1). In such cases it is usually necessary to combine the valgus correction with a flexion, extension or rotation osteotomy. Accurate preoperative planning is the key to a successful outcome [1,3,7].

In reviewing our patients, we found 67 who had undergone proximal femoral osteotomies following trauma. Fifty-eight of these patients were available for follow-up — 16 females and 42 males. The average age of the patients at the time of corrective osteotomy was 37.3 years, with a range from 13 to 69 years.

The osteotomies were performed to correct fractures about the hip that had united in a faulty position or had progressed to nonunion. Most of these fractures were caused by accidents at work, in motor vehicles or at home; few were the result of athletic or war injuries. Fifty of the fractures were closed and 8 were open; 34 involved the left hip and 24 the right hip. Primary treatment had been operative in 39 patients and nonoperative in the remaining 19. The injuries consisted mostly of femoral neck fractures. Lateral and pertrochanteric fractures were less common in this series.

The indications for corrective osteotomy were deformity in 22 cases, deformity with nonunion in 28 cases, the course of the fracture line in 4 patients, and osteoarthritis or partial avascular necrosis in the remaining 4.

The decision to undertake corrective osteotomy was based chiefly on subjective complaints, clinical findings, and roentgenologic findings, in that order.

Only 8.6% of the patients rated the result of their primary treatment as good, 60.3% rated it as fair, and 31.1% rated it as poor (cf. Fig. 2). We evaluated hip function according to our modification of the scheme of Merle d’Aubigné [2] (Table 1).

With regard to function, hip mobility was good in 16 patients, fair in 25, and poor in 17.

Walking distance was only 100 m in 27 patients, 1000 m in 21 patients, and more than 1000 m in only 10 patients.

Eighteen patients walked with a normal gait or had a slight limp. Fourteen patients required one or two crutches (Table 2). Eight patients had additional
Fig. 1. Malunited sub- and pertrochanteric fracture in a 20-year-old man that healed in excellent position following corrective osteotomy. Top: 1 year after injury, 1st operation; middle: 6 months after corrective osteotomy; bottom: 8 years after corrective osteotomy