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Abstract Five cases of stress fracture of the patella in athletes are presented. Four of these occurred transversally in the lower part and one longitudinally in the lateral part of the patella. Three of the patients were females (endurance runner, high jumper, and orienteerer) and two males (volleyball and soccer player). The diagnosis was made 2–8 months from the onset of the symptoms. Conservative treatment was successful in only one patient; all others were treated surgically, with good end result. Drilling of the fracture line was performed twice with metal wire cerclage fixation, excision of the lateral fragment was carried out once, and a bone graft with K wires and cerclage compression (tension band) was performed once. In all cases the patellar retinaculum was intact, indicating a stress injury.

Stress fracture of the patella is a rare overuse injury, and therefore difficulties and delays in the diagnosis and treatment may occur. In cases with delayed diagnosis we recommend operative treatment.

Key words Patella • Stress fracture • Overuse injury • Delayed union • Surgical treatment

Fig. 1 a Ultrasound shows a gap on the anterior surface of the lower pole of the patella. b Radiograph of the same patella: an unstable stress fracture of the lower patellar pole.

Fig. 2 a Stress fracture of the lower pole of the patella in a volleyball player. b United stress fracture 15 years later.

Fig. 3 a An 8-month-old stress fracture gap at the lower pole of the patella in a 19-year-old female high jumper. b A positive technetium-99 scan. c Radiograph after cerclage fixation and drilling through the fracture area. d Radiograph 3 months later. The fracture is almost healed. e After removal of the cerclage 6 months after surgery the fracture is completely healed. Sclerosis is increased at the lower patellar pole.

Introduction

Anterior knee pain during athletic activities is often associated with overuse [3, 21, 27]. Overuse syndromes can be divided into different patellofemoral joint problems [12, 14, 22, 35], patellar and quadriceps tendon pains [2, 10, 32, 33], and intra-articular plicae and synovial problems [1, 4, 34]. Stress fracture of the patella is one of the least common reasons for anterior knee pain [5, 6, 15, 19, 24, 31, 36, 37]. It usually heals well, but a delayed union may develop, fragments can separate, and operative treatment becomes necessary [15, 37].