

**Univerzita Karlova v Praze 1. lékařská fakulta**

Postgraduální doktorský program v biomedicině

**Studijní obor:** Experimentální chirurgie

**Disertační práce**

**MUDr. Jan Klouda:** Preoperative planning of the reconstructive surgery of the forefoot

## **Abstract**

The presented thesis describes a study aimed at the change of articular surface position in the region of first metatarsophalangeal joint after operative reconstruction due to hallux valgus deformity, done by performing Lapidus arthrodesis. The study evaluates a cohort of patients, who underwent surgery in Department of Orthopaedics, First Faculty of Medicine, Charles University in Prague at Motol University Hospital from 2010 to 2015.

The results and clinical implications of the aforementioned retrospective study were published in 2018. The observers evaluated several defined angles on preoperative and postoperative radiographs of the forefoot. The angles were thoroughly selected with regard to the exact representation of first metatarsophalangeal joint articular surface position in relation to the axes of first metatarsal and the whole forefoot.

The executed measurements allowed us to assess the overall effectivity of the performed surgery in deformity correction, as well as to describe possible pitfalls and disadvantages resulting from the change of structural relationships among anatomical structures. Our results confirmed the hypothesis of a potentially unfavourable lateral inclination of first metatarsal head articular surface after Lapidus arthrodesis. Nonetheless, we were able to prove the effectivity of a simple complementary procedure, that can be used in combination with the arthrodesis, in the improvement process of the articular surfaces position. That is a finding, which can be easily implemented into clinical practice.