

**Univerzita Karlova
3. lékařská fakulta**



Disertační práce – Abstract

Miniinvazivní odběr spongiózních štěpů v traumatologické indikaci –
experimentální a klinická studie

Minimally Invasive Cancellous Bone Graft Harvesting in Trauma
Indication –
Experimental and Clinical Study

Školitel: MUDr. Martin Kloub, Ph.D.

Abstract

The thesis „Minimally invasive cancellous bone graft harvesting in trauma indication” deals with the strategy of treatment of complicated fractures and false joints using miniinvasively collected bone grafts. The thesis includes experimental and clinical parts. The aim of the experimental part is a laboratory comparison of red bone marrow content in mini-invasively taken bone grafts from ten cadaver specimens from chosen sites with the reference collection from the ilium of the hip bone. In the clinical part of the study we focus on the practical results of this surgical technique, especially on the amount of spongy bone tissue collected, efficiency of its use and complications. We evaluate the pain in the area of graft collection site and compare it with the pain after the standard collection from the ilium of the hip bone. In the experimental part of the thesis, we confirmed the content of red bone marrow in mini-invasive bone grafts from the area of the greater trochanter, distal femur, and proximal humerus is comparable with grafts taken from the ilium of the hip bone. The grafts taken from the proximal tibia and proximal ulna show significantly less red bone marrow. The clinical part has shown that sufficient tissue can be mini-invasively taken for the treatment of complicated defective fractures and false joints. Using these grafts, spongioplasty is effective with a minimum proportion of unhealed fractures. It represents a technique with a low risk of postoperative and late complications. The thesis brings a new insight into the strategy of treatment of displaced defective fractures or false joints where augmentation with spongy bone grafts is planned. The main advantages of the surgical method are the proximity of collection to the surgical field, efficiency and low level of pain in the postoperative period.