



Hirurško lečenje otvorenih preloma potkolenice

Surgical Treatment of the Lower Leg Open Fractures

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Apstrakt

Otvoreni prelomi potkolenice spadaju u grupu najčešćih otvorenih preloma i čine 63% svih otvorenih preloma lokomotornog sistema. Najčešće su rezultat dejstva sile velike energije u sklopu saobraćajnog traumatizma.

Otvoreni prelomi potkolenice, zbog teškog oštećenja mekih tkiva, izražene kominucije preloma, gubitka koštanog tkiva i potencijalne infekcije mogu da predstavljaju težak terapijski problem. Hirurško lečenje podrazumeva primarnu hiruršku obradu rane otvorenog preloma i primenu metoda spoljašnje skeletne ili unutrašnje fiksacije (intramedularne), kod otvorenih preloma I i II stepena. Klasifikacije otvorenih preloma su, uglavnom, terapijske i imaju za cilj da ukažu na protokol lečenja otvorenih preloma. Najčešća klasifikacija otvorenih preloma potkolenice je klasifikacija po R. Gustil-u.

Lečenje otvorenih preloma potkolenice prati čitav niz komplikacija i to: infekcija rane otvorenog preloma, duboka koštana infekcija – osteitis, usporeno zarastanje, zarastanje preloma u lošoj poziciji, nezarastanje preloma i gubitak ekstremiteta. Cilj lečenja je zarastanje otvorenog preloma potkolenice i povratak funkcije povređenog ekstremiteta na nivo pre povređivanja, što omogućava pacijentu vraćanje njegovim radnim i životnim aktivnostima.

U savremenoj traumatologiji i dalje se vodi debata o izboru metode fiksacije preloma tibije i hirurškom rešavanju oštećenog mekotkivnog omotača potkolenice. Spoljna skeletna fiksacija predstavlja standardnu metodu za stabilizaciju svih otvorenih preloma potkolenice, osim otvorenih preloma I, II stepena po Gustillu, kada se može primeniti i unutrašnja fiksacija, intramedularnim klinom. Spoljna skeletna fiksacija obezbeđuje dobre biomehantičke uslove za sanaciju otvorenog preloma potkolenice, omogućava dobar pristup i negu rane i ne ometa pokrete u kolenom i skočnom zglobu. Postoperativno, bolesnici započinju sa ranom mobilizacijom, hodom i pokretima u kolenom i skočnom zglobu. Problem koji se sreće kod metode spoljne skeletne fiksacije je česta mekotkivna i koštana infekcija oko klinova spoljnog skeletnog fiksatora, pogotovo kod nošenja spoljnog fiksatora duže od 6 meseci.

Danas je u savremenoj traumatologiji sve popularnija primarna intramedularna fiksacija otvorenih preloma I, II i IIIa stepena, uz dobar debridman rane. Uloga intramedularne fiksacije kod otvorenih preloma IIIB stepena i dalje predstavlja kontroverzu. Alternativni metod u lečenju težih otvorenih preloma predstavlja i odložena intramedularna fiksacija, nakon primarne spoljne skeletne fiksacije.

Rana otvorenog preloma, nakon primarne hirurške obrade i spoljne skletne fiksacije primarno se ne zatvara, već se ostavlja

Abstract

Open fractures of the lower leg are among the most common open fractures and comprise 63% of all open fractures of the locomotor system. Most often, they are the result of the action of high-energy forces as part of traffic trauma.

Open fractures of the lower leg, due to severe soft tissue damage, severe comminution of the fracture, loss of bone tissue, and potential infection can represent a difficult therapeutic problem. Surgical treatment includes primary surgical treatment of open fracture wounds and application of external skeletal or internal (intramedullary) fixation methods, in open fractures of the first and second degree. Classifications of open fractures are mainly therapeutic and aim to indicate the treatment protocol for open fractures. The most common classification of open fractures of the lower leg is the classification according to R. Gustilo.

The treatment of open fractures of the lower leg is accompanied by a whole series of complications, namely: infection of the open wound with a pellicle, deep bone infection - osteitis, delayed healing, healing of fractures in a bad position, non-healing of fractures, and loss of limbs. The goal of treatment is the healing of an open fracture of the lower leg and the return of the function of the injured limb to the level before the injury, which allows the patient to return to his work and life activities.

In general traumatology, there is still a debate about the choice of the tibial fracture fixation method and the surgical treatment of the damaged soft tissue sheath of the lower leg. External skeletal fixation is the standard method for stabilization of all open fractures of the lower leg, except for open fractures of the I, and II degrees according to Gustilo, when internal fixation can also be applied, with an intramedullary wedge. External skeletal fixation provides good biomechanical conditions for the repair of open tibial fracture, allows good access and care of the wound, and does not interfere with movements in the knee and ankle joints. Postoperatively, patients begin early mobilization, walking, and knee and ankle movements. The problem encountered with the method of external skeletal fixation is frequent soft tissue and bone infection around the pegs of the external skeletal fixator, especially when the external fixator is worn for longer than 6 months.

Today, in modern traumatology, primary intramedullary fixation of open fractures of the I, II and IIIa degrees with good debridement of the wound is increasingly popular. The role of intramedullary fixation in grade IIIB open fractures is still controversial. An alternative method in the treatment of more severe open fractures is delayed intramedullary fixation after primary external skeletal fixation.

The wound of an open fracture, after primary surgical treatment and external joint fixation, is not primarily closed, but left

otvorena. Rana otvorenog preloma zatvara se, kada smo sigurni da nema znakova infekcije, primarno odloženim, sekundarnim šavom ili nekom od metoda plastične hirurgije (fasciokutani, mikrovaskularni režanj), što zavisi od veličine defekta mekih tkiva. Ranu intravensku antibiotsku terapiju, kod otvorenih preloma potkolenice, treba započeti odmah po prijemu povređenog. Obično se ordinira trokomponentna antibiotska terapija. Antibiotska terapija se nastavlja 48 do 76 sati kod otvorenih preloma I i II stepena, dok se kod otvorenih preloma III stepena može produžiti do 120 sati nakon otvorenog preloma i primarnog debridmana rane.

Primarna obrada rane otvorenog preloma potkolenice, spoljna skeletna fiksacija, antibiotska terapija i antitetanusna zaštita, rano pokrivanje i rekonstrukcija kožnog i mekotkivnog defekta predstavljaju elemente od velike važnosti u spašavanju potkolenog segmenta i dobrog funkcionalnog oporavka.

open. The wound of an open fracture is closed, when we are sure that there are no signs of infection, with a primary delayed, secondary suture or one of the methods of plastic surgery (fasciocutaneous, microvascular flap), which depends on the size of the soft tissue defect. Early intravenous antibiotic therapy for open lower leg fractures should be started immediately upon admission. Three-component antibiotic therapy is usually prescribed. Antibiotic therapy is continued for 48 to 76 hours in open fractures of the I and II degrees, while in open fractures of the III degree, it can be extended up to 120 hours after the open fracture and primary debridement of the wound.

Primary treatment of an open lower leg fracture wound, external skeletal fixation, antibiotic therapy, and anti-tetanus protection, early coverage, and reconstruction of the skin and soft tissue defect are elements of great importance in saving the lower leg segment and good functional recovery.