



STERILE SYRINGE USED AS A HARVESTING THE BONE MARROW AND TISSUE PROTECTOR DURING REAMING IN TIBIA INTERLOCK NAILING

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ABSTRACT

Obtaining autogenous bone graft from the iliac crest can entail substantial morbidity. Alternatively bone graft can be harvested from long bones using a intramedullary harvesting system. We measured bone graft volume obtained from the intramedullary canals of tibia and documented the complications of the harvesting technique. 40 patients, (22 male, 18 female) with an average age 44.2 years (15 -78 years), had graft harvested from tibia. Damage to the substance of patellar tendon , Chances of eccentric reaming ,Loss of bone marrow ,Damage over lower pole of patella, Cost effectiveness were assessed with and compared with the conventional procedure.

KEYWORDS :

INTRODUCTION

Obtaining autogenous bone graft from the iliac crest can entail substantial morbidity.¹Autologous bone graft continues to represent the gold standard for management of bone defects or nonunions. It possesses biologic advantages over heterologous and synthetic bone substitutes as a result of its excellent combination of osteogenic, osteoinductive, and osteoconductive properties.² Alternatively bone graft can be harvested from long bones using a intramedullary harvesting system¹. We measured bone graft volume obtained from the intramedullary canals of tibia and documented the complications of the harvesting technique. The reamer/irrigator/aspirator (RIA) system (Synthes, Inc., West Chester, PA) was developed as a simultaneous reaming and aspiration system to reduce the intramedullary pressure, heat generation, operating time, and systemic effects of reaming (eg, fat embolism)³

During nailing of tibia there are many complication of reaming without tissue protection⁴

- Damage to the substance of patellar tendon
- Chances of eccentric reaming
- Loss of bone marrow
- Damage over lower pole of patella

AIMS AND OBJECTIVES

- Avoid soft tissue injury during reaming
- Collection of bone marrow

METHODOLOGY

In this procedure , we positioned the patient supine in the radiolucent table, and an incision of 2cm was given starting from the lower pole of patella to the tibial tuberosity, patellar tendon was retracted laterally.

We used a sterile syringe and cut its distal end and used it as a tissue protector and bone marrow harvester. A reamer of size 8 was inserted through the syringe and reaming was done , the reamer was extracted and thus harvested bone marrow was collected and bone marrow infusion was done in the fracture site.



Sterile Syringe is cut with blade



After making entry the reamer is introduced in canal with syringe over it.



Collected bone marrow is aspirated in another syringe during reaming



Collected marrow is injected at fracture site to accelerate the healing

DISCUSSION:-

In our study we selected 40 patients, (22 male, 18 female) with an average age 44.2 years (15 -78 years), had graft harvested from tibia and bone marrow infiltration was done. It was found that it enhance the bone healing on radiographic evaluation. Chances of eccentric reaming, loss of bone marrow and damage over lower pole of patella was less and it was also found that damage to the substance of patellar tendon was lesser with the use of this technique and also their was less incidence of anterior knee pain.

CONCLUSION:-

It is a novel technique with better healing of fracture.

It is very cost effective and simple procedure to perform compared to the conventional RIA (Reaming, Irrigation and Aspiration) technique

There is also lesser chances of damage to the substance of patellar tendon, Chances of eccentric reaming was less, Loss of bone marrow was decreased and damage over lower pole of patella is less.

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