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## Dr. Thakur innovative technique of suprapatellar nailing of tibia

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### Abstract

Intramedullary nailing is treatment of choice for diaphyseal fractures of tibia in adults. Infrapatellar medullary nailing usually done for diaphyseal tibial fractures but in metaphyseal fractures reduction become a challenge due to anterior deformity due to pull of patellar tendon. Suprapatellar nailing is becoming popular and route of choice for metaphyseal fractures because it is done in semiextended position which helps in good reduction and fixation. But the major disadvantage of this approach is the specific instrument sets and implants are very costly. In this study we used an innovative technique of suprapatellar nailing of fracture tibia which is very cost effective. No special instrument sets used, no jig used, protective sleeve and trocar are used from PFNA2 set and colour coded infrapatellar nail extractor used to introduce the nail in proper position.

**Keywords:** Suprapatellar nailing, metaphyseal fractures, innovative technique

### Introduction

Tibial fractures are most common among the long bone fractures in the human body. These are usually caused by high energy collisions such as a motor vehicle or motorcycle crash or fall from a height. Study shows that Dr. Thakur's Innovative Technique of Suprapatellar Nailing of Tibia is a safe and cost effective method of treatment for metaphyseal tibial fracture.

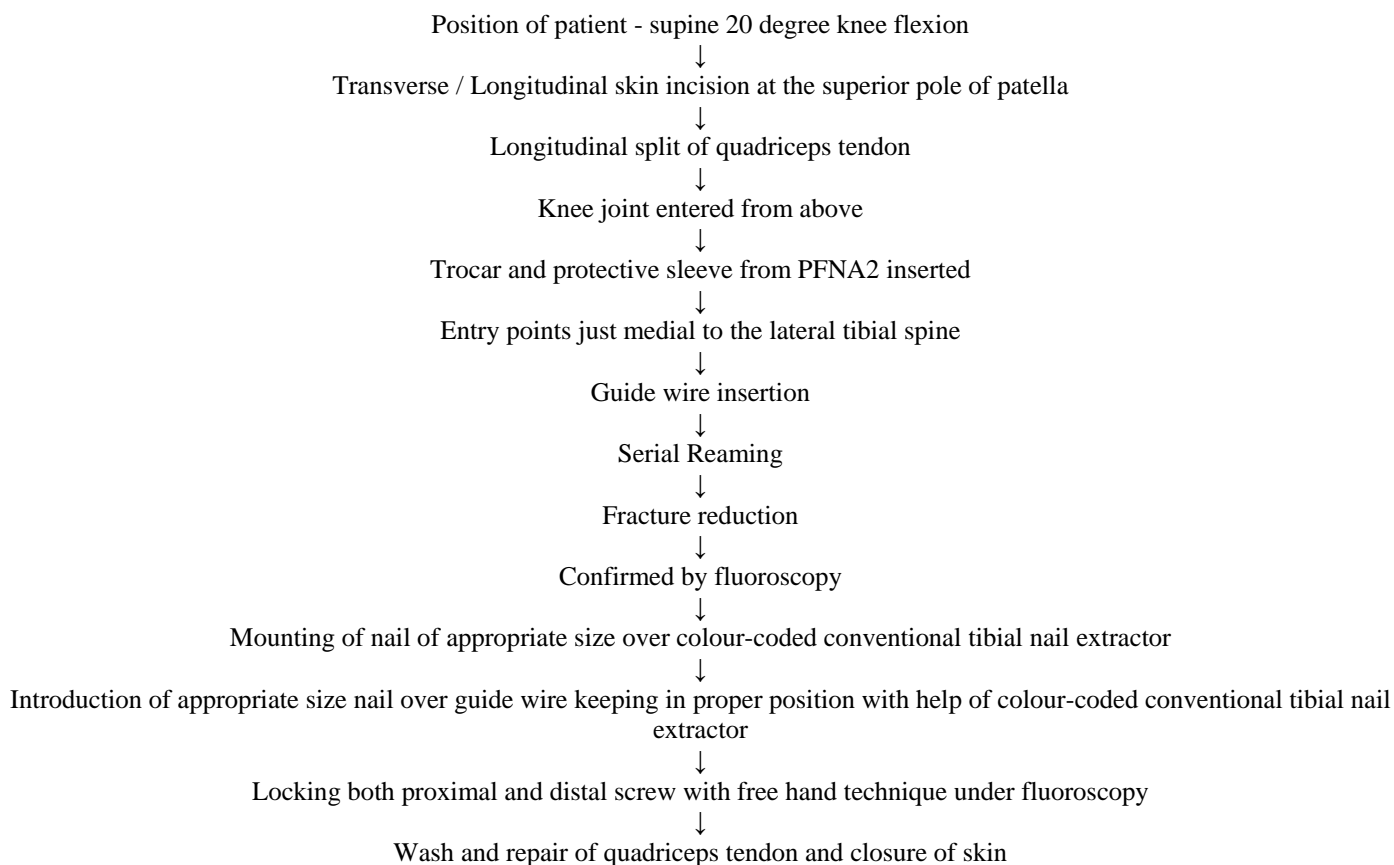
Intramedullary Nailing is the treatment of choice for diaphyseal fractures of tibia in adults. In the treatment of metaphyseal tibial fractures, concerns regarding difficulties with reduction due to anterior deformity becomes a challenge. Suprapatellar nailing is becoming a popular choice for treating metaphyseal fractures of tibia. It requires highly specialized instrument sets and implants that tends to be very costly.

Dr. Thakur's Innovative Technique of Suprapatellar Nailing of Tibia delivers 100% satisfactory union of fracture in safe and cost-effective way. No special instrument sets or jigs are required. A protective sleeve and a trocar can be used from PFNA2 set. Color-coded infrapatellar nail extractor can be used to introduce the nail in proper position.

### Materials and Methods

We conducted a study between Mar 2020 to Mar 2021 Dr. Thakur's Innovative Technique of Suprapatellar Nailing of Tibia was conducted on 25 patients to fix their tibial fractures. The patients having tibial fractures with no involvement of the articular surface were included in the study. Age of the patients ranged between 18 to 60 years, and they had no comorbidities. All surgeries were performed after an average of 5.5 days (range of 3 to 12 days) after the accident. 2.5 mm k-wire used as a blocking wire to improve nailing of proximal tibia fractures. The tibial fracture of all the patients was fixed by Dr. Thakur's Innovative Technique of Suprapatellar Nailing of Tibia.

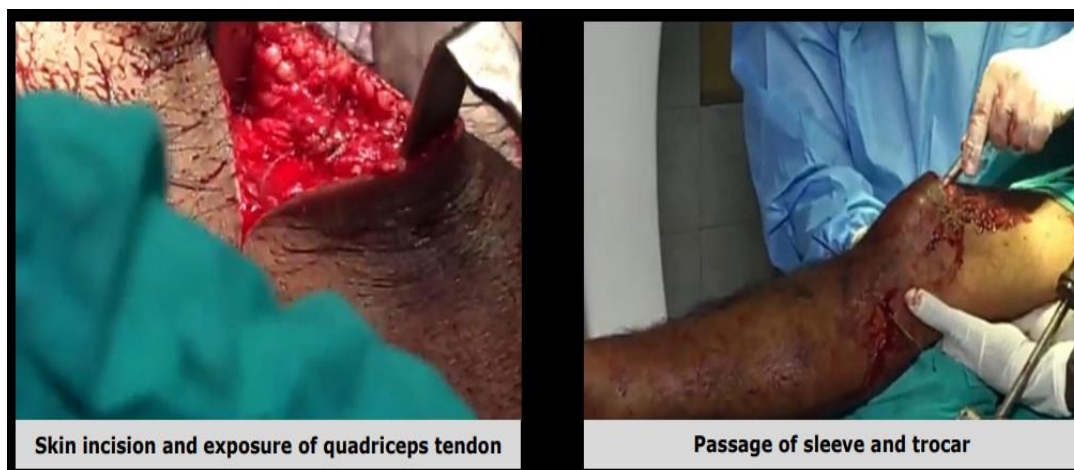
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**Dr. Thakur Innovative Technique of Suprapatellar nailing of Tibia in Semi extended Position of Knee****Post Operative Follow Up**

Passive flexion and extension exercises of knee and ankle joint from 1st postoperative day and active flexion and extension exercises of knee and ankle started from 3rd postoperative day. After 10th day patient were encouraged to get out from bed and started non weight bearing walking on affected limb with the help of walker and after 6 to 8 weeks partial weight bearing started with axillary crutches. After 12 week full weight bearing was permitted according to status of fracture union. Interoperability data consisting of operating time post operating data including hospital stay, fluoroscopy time, fracture union time recorded. No complication was found in our study. The result were satisfactory in all patients.

**Results:** The average operating time  $80 \pm 10$  minutes (Range

65 to 110 minutes). Fluoroscopy during surgery was  $38.5 \pm 6.5$  second (Range 10 to 50 sec) Average hospital stays 10 to 12 days. All patient followed after 2 weeks 3 weeks 6 weeks and 12 weeks. Those who couldn't return for follow up telephonic follow up were done and called for follow up in hospital. Average time of union of fracture was 8 weeks after surgery with fracture healing time of 12 weeks. No complication were observed, no patient experienced loosening breakage of screws or nail and no one complained for knee pain. No reduction loss or significant displacement of fracture occurred after surgery. At final follow up 21 cases found excellent and 4 good. In no patient removal of nail done for any cause.

**Figure format****Fig 1**

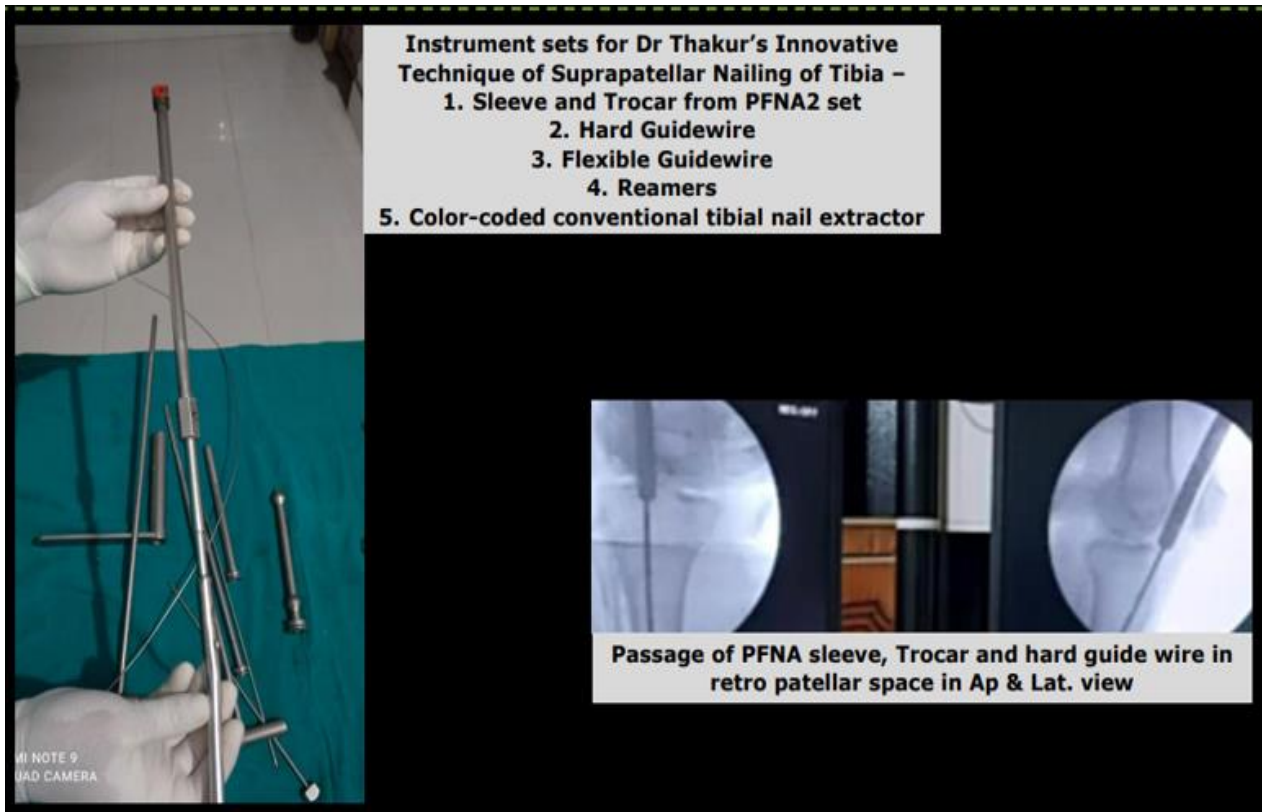


Fig 2



Fig 3

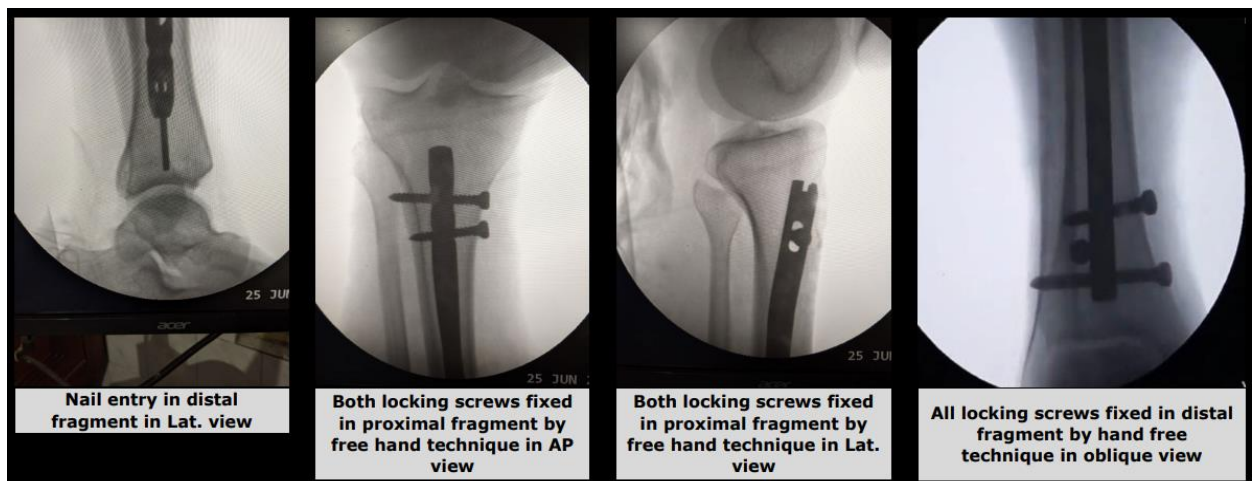


Fig 4



Fig 5

Tables 1: Clinical Details of Patients

Age years (range)	35.5 (18-60)
Gender, n (%)	
Male	21 (84%)
Female	04 (16%)
Causes of fractures, n (%)	
Road traffic accidents	18 (72%)
Falling from height	7 (18%)

### Discussion

The biggest advantage of suprapatellar nailing was the extension of knee during surgery which was very useful in reduction of fractures of complex metaphyseal area. In this study in all 25 patients Dr. Thakur innovative technique of suprapatellar nailing of tibia was used. 4 upper third 2 mid third and 19 lower third fractures done by Dr. Thakur innovative technique of suprapatellar nailing of tibia. In all satisfactory reduction could be achieved and good recovery outcomes were found with no loss of reduction. In 100% patients fracture union occurred. In this study Dr. Thakur innovative technique of suprapatellar nailing of tibia found to be safe & cost effective. It can be used in small and medium class orthopaedic hospitals because this is very cost effective & provides satisfactory union.

### Limitations of This Study

1. Number of cases included in this study was small.
2. The study was not comparative with the standard technique.
3. The status of cartilage over patella and trochlea post surgery has not been evaluated. Thus, further more study with larger population and long follow up time required to compare this innovative technique with standard technique of suprapatellar nailing.
4. In this technique fluoroscopy time was slightly more than standard technique because both distal and proximal locking were done by free hand technique.

### Acknowledgments

No conflict of interest related to this work.

### References

1. Gaines RJ, Rockwood J, Garland J, Ellingson C, Demaio M. Comparison of insertional trauma between suprapatellar and infrapatellar portals for tibial nailing. *Orthopedics*, 2013 Sep 1;36(9):e1155-1158.

2. Jakma T. Insertion of intramedullary nails from the suprapatellar pouch for proximal tibial shaft fractures. *Europe PMC*. 2011 Dec 1;77(6):834-837. Retrieved January 23, 2022, from <https://europepmc.org/abstract/MED/22308632>
3. Katsoulis E, Court-Brown C, Giannoudis PV. Incidence and aetiology of anterior knee pain after intramedullary nailing of the femur and Tibia. *The Journal of Bone and Joint Surgery. British*. 2006;88-B(5):576-580. <https://doi.org/10.1302/0301-620x.88b5.16875>
4. Morandi M. Intramedullary nailing of tibial fractures: Review of surgical techniques and description of a percutaneous lateral suprapatellar approach. *Orthopedics*, 2010 Mar 1;33(3):172-9. <https://doi.org/10.3928/01477447-20100129-22>
5. PMC E. Intra-articular risks of suprapatellar nailing. *Europe PMC*. 2012 Dec 1;41(12):546-50. Retrieved January 23, 2022, from <https://europepmc.org/article/med/23550286>
6. Rothberg DL, Daubs GM, Horwitz DS, Kubiak EN. One-year postoperative knee pain in patients with semi-extended tibial nailing versus control group. *Orthopedics*. 2013 May 1;36(5):e548-53. <https://doi.org/10.3928/01477447-20130426-14>
7. Ryan SP, Steen B, Tornetta P. Semi-extended nailing of metaphyseal tibia fractures. *Journal of Orthopaedic Trauma*. 2014;28(5):263-269. <https://doi.org/10.1097/bot.0000000000000083>
8. Sanders RW, Di Pasquale TG, Jordan CJ, Arrington JA, Sagi HC. Semiextended intramedullary nailing of the tibia using a suprapatellar approach. *Journal of Orthopaedic Trauma*. 2014 May 1;28(5):245-55. <https://doi.org/10.1097/01.bot.0000452787.80923.ee>