



## Case Report

# TRACTION TABLE COMPLICATION – A CASE REPORT OF INTERTROCHANTERIC FRACTURE OF FEMUR

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### Abstract :

Traction tables are utilized as a part of different orthopedic surgical procedures like fracture fixation, hip arthroscopy and arthroplasty surgeries. Utilization of traction table for the common fractures in elderly like between trochanteric fractures with hip screw fixation was achievable and safe. In the meantime utilization of traction table is not without intricacies, viz. malrotation, malalignment, neurologic wounds, delicate tissue wounds and well leg compartment disorder. The reasons proposed for traction table related complications were abuse of footing, lacking position of the perineal post and so on. The orthopedic specialist who utilizes the traction table for surgical management of femur fracture ought to be acquainted with the dangers and related difficulties to minimize those complications. One such instance of traction table related complication was encountered in an intertrochanteric fracture femur surgical management in an elderly patient.

**Key words: Traction Table, Fracture table, intertrochanteric fracture femur, Malalignment**

### INTRODUCTION

Traction tables have been portrayed for utilization in fracture management as ahead of early as 1927.<sup>1</sup> which are currently,utilized as a part of various orthopedic strategies about the hip, including hip arthroscopy,<sup>2</sup> hip resurfacing,<sup>3</sup> primary total hip arthroplasty (THA),<sup>4</sup> and femoral fracture fixation.<sup>5</sup> Regardless which method is performed, the patient must be securely situated on the table to minimize complications. Positioning of the patient during the orthopedic surgeries differ according to the table model, surgical procedure and surgical preference. In all patients positioning for surgeries like supine, prone or lateral decubitus position the traction is applied to the affected extremity with the comfort given to the well leg using the C arm. Alternatively the healthy extremity can be given traction to facilitate reduction procedures and avoiding pelvic rotation. In most cases, the radiolucent perineal post is used as a fulcrum against which traction is applied.<sup>6</sup> The operating surgeon should be aware of all these positioning and anticipate traction table complications in spite of well positioning of the patient for orthopedic surgeries. The actual true incidence of peri-operative traction table complications remains uncovered and is most likely not reported. We are



reporting a case of traction table complication in an elderly female during intertrochanteric femur fracture management.

### CASE SCENERIO

A 60 year old female patient was admitted for the inte

trochanteric fracture of femur without any other injuries and other medical illnesses. The orthopedic team of doctors planned for a proximal femoral nailing. Patient was placed on supine position on the traction table. The normal limb was kept flexed, abducted and hemilithotomy position. The affected limb was placed on the fractured table frame and perineum was supported by perineal post. The foot was placed on the foot piece of traction frame and was supported by rubber straps. Anatomical reduction was done by applying traction and external rotation along with manipulation. The position was checked with "C" arm and the patient was satisfactory. Because of certain issues in the traction table there was a failure of maintenance of reduction by providing consistent traction. This has led to the following complication. The misjudging of the entry point of the nail led to the malrotation and malalignment with posterior translation of the distal fragment and also which resulted in flexion, abduction and external rotation of proximal fragment. Re reduction and re manipulation was tried in the patient, but in spite the malrotation and malalignment were difficult to realign and normal rotation. So finally the team has decided to remove all the implants and manipulated the fracture in such a way that the proximal fragment inserted in to the distal fragment along the medial cortex. Then the tibial traction was applied to maintain the position.

**Figure – 1 and 2 showing the traction table used and patient positioning during the surgery (example)**



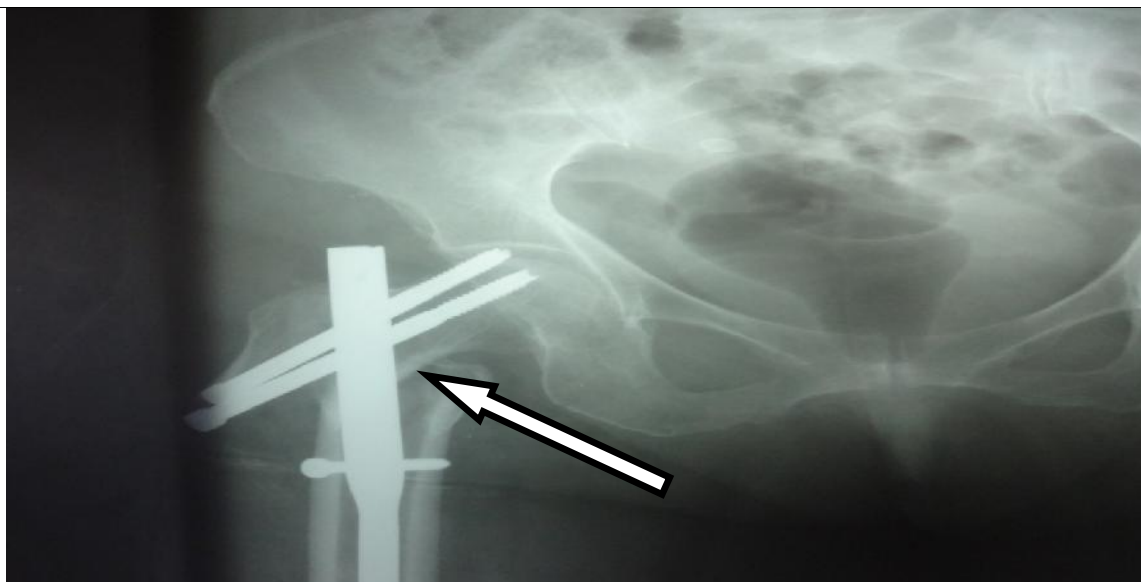
Fracture table (Traction table)



Patient in hemilithotomy position (Dummy patient)



**Figure – 3 – showing the per operative nailing procedure with malalignment of the fractures segments**



**Malalignment of the fracture segments**

**Figure – 4 and 5**

**Post operative X ray Hip showing removal of the nails**



**X ray showing the removal of nails and malalignment of fracture segments**



**Patient in tibial traction after the removal of the nails**



## DISCUSSION

In this case report, we have reported a case of traction table related complication which is malalignment and malrotation because of misjudging of the entry point during the surgical management of intertrochanteric femur fracture. Stephen DJ et al<sup>7</sup> study on a randomized controlled trial of intramedullary femoral nail fixation showed a significantly increased incidence of internal malrotation in patients treated on a traction table compared with those treated with manual traction. But the Malaysian study done by SG Gooi et al<sup>8</sup> on comparison of outcome of dynamic hip screw fixation of intertrochanteric fractures of femur with and without using traction table reported that there was no significant difference of complications noted between the two groups in relation to the fixation and fracture reduction. Many other studies also suggest that reduction of intertrochanteric fracture of femur without a traction table is a better option under certain circumstances. The other traction table complications reported by various international studies by Kao et al<sup>9</sup>, Mc Laren et al<sup>10</sup>, Coelho et al<sup>11</sup>, Carlson DA et al<sup>12</sup> reported pudendal nerve injuries, crush syndrome, soft tissue injury and well leg compartment syndrome respectively. The proposed causes of traction table related complications were misuse of traction, inadequate placement of perineal post and hemilithotomy position. So based on the above mentioned studies which reported the various traction table complications, the orthopedic surgeons should ought to consider certain recommendations from various international orthopedic associations, to be followed like adequate positioning of the patient, use of radiolucent flat top operating table, keeping the perineal post between the genitalia and contralateral leg, avoiding the hemilithotomy position of the well leg, avoiding the adduction of surgical leg past neutral and minimizing the surgical and traction time.<sup>13, 14, 15 and 16</sup>

**Conclusion:** Reduction and fixation of intertrochanteric fracture by manual traction is safe and effective rather than using traction table and at the same time the orthopaedic surgeon who utilizes a traction table for the surgical management of femur fracture must be familiar with the associated complications and develop a plan to avoid such complications, with the use of a radiolucent flat-top operating table for obese patients, adequate patient positioning, and the minimum possible surgical time.

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