

## The Interest of the Transfracturar Approach in the Hip's Arthroplasties towards Pertrochanterics Fractures

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**Received date:** September 16, 2020; Manuscript No. IPJBRR-20-6154; **Editor assigned date:** September 22, 2020, PreQC No. IPJBRR-20-6154 (PQ);

**Reviewed date:** October 06, 2020, QC No. IPJBRR-20-6154; **Revised date:** August 25, 2022, QI No. IPJBRR-20-6154; Manuscript No. IPJBRR-20-6154 (R); **Published:** September 22, 2022, DOI: 10.36648/IPJBRR.8.5.55

**Citation:** Abdessamad K, Moncef E, Abdelhafid D, Ahmed D, Maatougui K, et al. (2022) The Interest of the Transfracturar Approach in the Hip's Arthroplasties towards Pertrochanterics Fractures. Bone Rep Recommendations Vol.8 No.5: 55.

### Abstract

The fixation with intramedullary trochanteric or trochanteric cervical plate is commonly indicated for fractures per trochanteric or subtrochanteric. However, this presents a significant failure rate, which is found particularly in unstable fractures or fractures of basicervicales. Arthroplasty is usually indicated for femoral neck fractures appear as an alternative to bone fractures and for some types is currently accepted by many surgeons. This indication was the subject of reflection during a meeting of the SOFCOT in 2010. It seemed interesting to ask ourselves the surgical approach to achieve for these replacements or the usual anatomical landmarks are altered by comminution features of these fractures. The purpose of our work is to describe a way of original and specific to these first trochanteric fractures as it will borrow fracture lines to address the hip joint. Once the joint discussed the preparation of the femur will be according to the orientation of the line position of external or internal rotation as for an anterior or posterior direction. This incision transfracturar or trans-trochanteric has several advantages: It seems less bleeding because the capsule and pelvitrochanteriens muscles are not cut, it may decrease the risk of dislocation because the capsular and muscular elements are preserved and it allows a fast first hip and simplifies the procedure.

**Keywords:** Inter-trochanteric fracture; Extracapsular proximal femoral fracture; Hip replacement; Transfracturar surgical approach

The unstable character of some fractures types and the bone quality that can return direct synthesis of fracture difficult and aleatory even what is the implant solidity.

### The operated context (age, associates tares)

It seemed interesting to ask ourselves the surgical approach of these replacements or comminution features of these fractures alter the usual anatomical landmarks. The purpose of our work is to describe a way of original and specific to these first trochanteric fractures as it will borrow fracture lines to address the hip joint.

### Case Presentation

Our study included 9 men (37.5%) 15 women (62.5%) that the middle age was 79 years old. The parker preoperative middle score was 57.21% of patients with a score of 9. The preoperative founded comorbidities brought together in the **Table 1**. Among these 24 patients, 10.4% have been living in nursing home care and 15.5% of these have been living in retirement home. The majority 74% has been living at their homes.

Fractures repartition is established as following 3% type A1 with coxarthrosis, 76.5 % type A2 and 20% type A3. 22 fractures have been associated with a coxarthrosis, whether average was at 1.7 day; 17% of patient was been operated in the same day of their hospitalizations. 14 patients benefited an arthroplasty by a partial replacement (58.3%) and 10 totals replacements with a double mobility acetabulum (100%); the stem was standard 20 times (83.3%) and recovery type 4 times (16.7%). The femoral implant was uncimented for all patients. The approach was posterolateral in 91% of cases (**Table 1**).

**Table 1:** Comorbidities founded in preoperative.

Type	Frequency in %
Cardiacs	64
Vasculars	48
Pulmonaries	15

### Introduction

Aged people fractures, and particularly those of proximal femur bone are increasing in parallel with life expectancy increment. The prognosis of these lesions still obscure insofar that they happen to weakened people by many comorbidities. The arthroplasty treatment indication for trochanteric fractures is justified by two orders of arguments.

renal	26.5
Neuroogicals	17
Contralateral coxarthrosis associate	48

### Approach description

**Preoperative planning:** Classical.

**Patient installation:** Lateral decubitus.

**Skin incision:** Longitudinal 12 cm. Focused on the greater trochanter, hip in flexion position.

Incision of the fascia lata with greater trochanter's exposure.

**Feature line analysis:** Fundamental line can be simple or complex, with a shear that detaches a third subaponeurosis fragment.

**Direct way to fracture:** Gluteus medius tendon dissected in direction of muscular fibers, and the approach extended to the fracture. Neck approach, capsule's incision.

**Extraction of head and collar:** Classical extraction with corkscrew.

### Acetabulum exposure

**Femoral exposition:** Leg positioned on internal rotation or external rotation according to the resistance related to capsular attachment balance.

**Femoral time:** Putting femoral graters in place. Anteversion positioning can be done by a classical way without difficulty. Highness's positioning is more delicate seeing that our landmark is missing, so we are based mostly on lesser trochanter as landmark.

**Testing/planning:** Putting in place trying implants. The hip is reduced. Stability and strength verification putting in place definitive implants.

**Closing:** Greater trochanter osteosynthesis can be done with:

- Hook plate
- Osteosuture
- Or by metal strapping: Haubanage.

### Results

#### All patients have been seeing again after six months at least

- One patient has been transfused after surgery
- One patient presented a deep vein thrombosis
- No joint dislocation's case
- No death's case

In revision, the middle parker score was 7.2 marks (extreme 0 and 9) and the middle PMA score was 15.6 marks. The pain item

was 4.2, mobility's one was 5 and walking's one was 3.6. The putting on charge was effective at 12.3 days as average and recuperation of walking perimeter at 20 days (Figures 1-4).

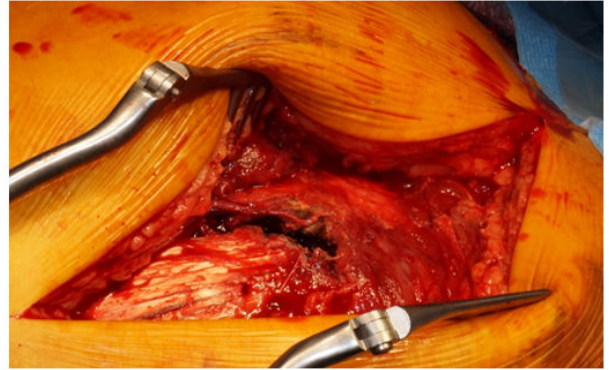


Figure 1: Fracture's line analysis.



Figure 2: Femoral head and collar extraction.



Figure 3: Acetabulum exposure.



**Figure 4:** Greater trochanter osteosynthesis with metal strapping.

## Discussion

In the case of unstable per trochanteric, any implant, whether it was extra or intramedullary, that doesn't allow osteosynthesis without mechanical woes. They by, for old patients who cannot tolerate a second surgery, some authors propose the putting in place of a hip prosthesis after proximal portion ablation.

This therapeutic option allows furthermore to treat effectively a coxarthrosis or any other hip's joint affection associate [4]. At the first sight, the prosthesis replacement seems more aggressive and less biological than osteosynthesis. However the operative time, blood's loss and mortality are comparable. Furthermore, this approach allows a mobilization with complete support from first's postoperative days and functional results are also satisfactories [5,6].

However the prosthesis replacement is not empty of risks. It is reported that a rate of joint dislocation at 3.3% for bipolar prosthesis but at 44.4% for total prosthesis. The use of transfracturar way. Made dis appear this very high rate of dislocation.

### This has also as advantage

- Do not aggravate the devascularization of broken bony fragment.
- Respect anterior and posterior capsule-sinewy elements.
- Reduce the time of the intervention.
- Allow a fast way to the hip and simplify the intervention [7,8].

The idea of this way was taken of its analogy with post-traumatic shoulder prosthesis:

- Way between tuberosities
- Rotator cuff's dissection
- Tuberosities fixations around the prosthesis

**Height determination's difficulty:** The major technical problem of this way is the restitution of leg's length [9,10]. By the way, in the case of unstable fractures and so complexes (31

A2.2 et 3 et 31 A3.3), the usual anatomic landmarks are disturbed (lesser trochanter fracture that is attracted in its proximal part by the psoas tendon, greater trochanter fracture that is attracted by the gluteus medius), it so good that a rigorous preoperative (and preoperative) planning should be imposed to not be exposed to an legs length inequality particularly, badly lived by the patient .

## Conclusion

The transfracturar approach way shows a bleeding and a lesser postoperative pains. This offers comfort to the patient able to re-educate himself faster. This approach way doesn't need any orthopedic table, or a specific ancillary and allow a satisfactory and reproducible positioning of implants. So this approach way is reliable and reproducible.

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