



A STUDY OF DISLOCATION AFTER PRIMARY TOTAL HIP REPLACEMENT BY POSTERIOR APPROACH

Orthopaedics

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ABSTRACT

Dislocation after primary Total Hip Arthroplasty is devastating complication which may lead to neurovascular damage if not treated urgently. Posterior approach to hip is most commonly used worldwide. It said to have increased chances of dislocation postoperatively as compared to other approaches according to literature but still a debatable topic of discussion.

In our study , we retrospectively studied 189 patients operated for primary THA in tertiary care centre fulfilling inclusion criteria. These patients were operated by same surgeon with posterior approach and uncemented implant with 28mm femoral head .Demographic data of patients and incidence of dislocation studied.

Our observations and results found out that male patients are more common and are of young age group who undergone THA. Most common indication for surgery was Avascular necrosis of femoral head. Out of 189 , only 3 patients had episode of dislocation.

With our study , we conclude that posterior approach to hip is safe if done by experienced surgeon with ideal implant positioning ,meticulous soft tissue repair & proper patient counseling for post-op rehabilitation.

KEYWORDS

INTRODUCTION

Dislocation of femoral head post primary total hip arthroplasty is one of the serious complication and nightmare for the operating surgeon. Dislocation means complete displacement of femoral head out of acetabular socket. Currently the incidence of dislocation after THA varies from 0.4 to 7% in primary THA and from 10 to 25% after Revision THA^{1,2,3} . The risk of dislocation depends on indication for THA , neuromuscular impairments such as cerebral palsy , muscle dystrophy , dementia and parkinsonism. Other risk factors are non compliance, soft tissue laxity, surgical approach, malpositioning of acetabular and femoral component , soft tissue tension, head size , offset^{4,5,6} . In literature , many studies suggest that posterior approach has more risk for dislocation post primary THA but is controversial. The purpose of our study is to know the incidence of dislocation after primary THA using posterior approach with soft tissue repair by same surgeon in tertiary care centre in India. In our centre, posterior approach with 8-10 cm incision commonly used for all hip arthroplasty cases with meticulous soft tissue dissection and repair. All patients were counseled for post-op physiotherapy & rehabilitation .

AIMS AND OBJECTIVES

- To study rate of dislocation according to age and sex of patient.
- To study rate of dislocation with 28 mm femoral head post primary THA.

MATERIALS AND METHODS

TYPE OF STUDY – RETROSPECTIVE

STUDY AREA – Department of Orthopedics , BJ Government medical college and Sasoon general hospital, Pune

PATIENT SELECTION- All patients admitted for Total Hip Replacement between 1/8/2016 to 1/8/2020. All patients operated by same surgeon with posterior approach uncemented type of prosthesis with 28 mm femoral head.

INCLUSION CRITERIA

- All patients treated with Primary THA between 1/8/2016 to 1/8/2020
- Surgical approach- Posterior with soft tissue repair
- Femoral head size only 28 mm

EXCLUSION CRITERIA

- Patients operated for hemiarthroplasty.
- Patients treated with Revision THA.
- Hip surgery other than posterior approach
- Patients with less than 30 days follow up

ETHICS APPROVAL

A retrospective study conducted at a tertiary care centre of B. J. Medical College and Sasoon Hospital, Pune, and approved by the regional ethical committee.

STUDY PROCEDURE

Total 189 patients are selected for study which fulfills inclusion criteria.

Records of these patients studied .

- Indication for surgery
- Demographic details
- Details of surgery
- Implant used
- In case of dislocation- mode of dislocation , history of trauma, duration from primary surgery,type of treatment , recurrence , neurological examination

OBSERVATIONS & RESULTS

Our study includes total 189 patients who were operated for primary total hip replacement by posterior approach. In all patients 28mm head size were used. The mean follow up was 22 .07 months .

- SEX DISTRIBUTION**-Out of 189 patients, 157 were male 32 were female

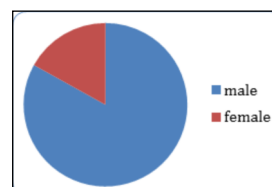


Figure 1

• AGE GROUP-

In our study, most of the patients are in age group of 20 – 35 years i.e. total 74 patients

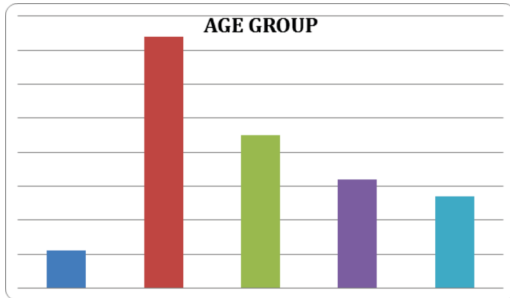


Figure 2

• DIAGNOSIS

This study shows maximum number of patients were of Avascular necrosis of femoral head i.e. total 129 patients

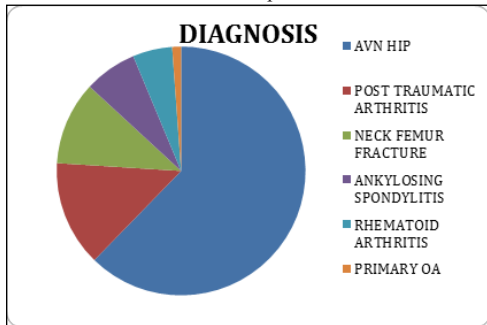


Figure 3

• DISLOCATION ACCORDING TO AGE & SEX-

In our study, out of 189 patients, ONLY 3 patients had POSTERIOR dislocation post primary THR. All 3 of them were above age of 65 years. 2 of them were male and 1 was female. Rate of dislocation among 189 patients was 1.59 %.

• MODE OF DISLOCATION-

In 2 patients ,mode of dislocation was traumatic and in one patient mode of dislocation was non – traumatic.

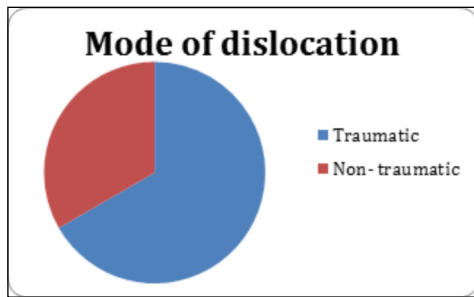


Figure 4

• DURATION OF DISLOCATION POST-OPERATIVELY-

Out of 3 patients, 2 had early dislocation and 1 was after 3 months of surgery

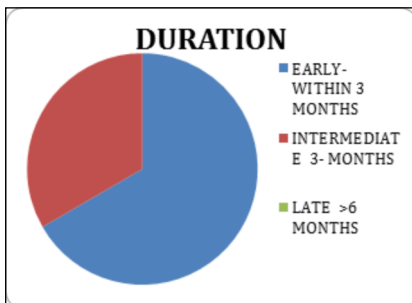


Figure 5

• TREATMENT-

All 3 patients were treated by closed reduction .

- In our study of 189 patients only 3 had dislocation. All 3 were male patients and above 65 years old. 2 of them had history of domestic fall leading to dislocation . 1 of them had non traumatic mode of dislocation i.e squatting in early post operative period.

All of them were treated by closed reduction ,abduction bar and bed rest for 2 weeks. None of them had recurrent dislocation.

DISCUSSION

Dislocation rate after THA is 0.2 to 10 % from review of literature^{7,8}

We note that incidence of dislocation decreases with meticulous soft tissue repair using posterior approach. Hedley et al. in 1990 reported that the incidence of dislocation was 0.4 % after THA⁹ .

Pellicci et al. reported 0 % to 0.8% dislocation rate after posterior soft tissue repair in 395 and 124 patients respectively.³

Dixon et al. in 2004 reported that the rate of dislocation was 0.39 % after capsulorrhaphy of gluteus maximus tendon without reattachment of short external rotators to greater trochanter.

Meta-analysis by Known and colleagues have shown that soft tissue repair after posterior approach significantly decreases rate of dislocation to 0.47 %.³

- We have compared our series results with previous published studies with **posterior approach**.

Table 1

Sr. no.	Authors	No. of THA	Dislocation rate
1	Hedlund and et al. ¹⁰	4230	2.1
2	Alikahn and et al. ¹¹	2527	2.1
3	Woo and Morrey ¹	685	5.8
4	Known and colleagues ³	Meta analysis	0.47
5	Pellicci et al ²	124	0.8
6	Suh, Kuen Talk et al. ¹²	96	1
7	Our study	189	1.59

- We also have compared our series results with previous published studies with **anterolateral approach**.

Sr	Author	No. of THA	Rate of dislocation
1	Alikahn and et al. ¹¹	3935	1.9
2	Mallory and et al ¹³	1518	0.79
3	Unwin & Thomas	1250	3.3

Surgical soft tissue handling & reconstruction is important for stability of joint. Surgeon must preserve muscle , tendon and capsule whenever possible. Pre operative planning & Acetabular component positioning with 45 degree abduction and 15 degree anteversion avoids impingement and dislocations. For this proper positioning of implant , requires identification of bony and soft tissue landmark. It includes Transverse acetabular ligament (TAL)¹⁴ , lateral lip of acetabulum, lateral aspect of ischium. Acetabular anteversion is titrated to femoral anteversion , so we achieve good combine anteversion.

Navigation may be future of maintaining limb length, offset and component positioning.

SUMMARY & CONCLUSION

In our study following points were gathered-

- Out of 189 patients, 157 (83.06 %) were male
- 32 (16.93 %) were female with average age was 49.57 years.
- Most common indication to undergo THA was AVN HIP(68.25 %).
- Out of 189 , total 3 patients had episode of dislocation (1.59%).
- 2 out of 3 dislocations were preceded by traumatic event and was within 3 months of surgery whereas in one patient mode of dislocation was non traumatic.
- All 3 of them were treated by closed reduction , abduction bar and bed rest for 2 weeks.
- There was no reported event of recurrent dislocation.

We conclude that , posterior approach to hip is safer, extensile , gives

good exposure if done by experienced surgeon with meticulous soft tissue repair. It avoids post operative abductor lurch. It has lower incidence of heterotropic ossification.

We highly recommend use of posterior approach with proper pre-operative planning and gentle soft tissue handling.

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