



SHALL IT BE BETTER, AS AN APPROACH FOR THR, POSTERIORLY OR LATERALLY; A CLINICO-FUNCTIONAL AND GAIT ANALYTICAL OUTCOME ANALYSIS, IN A PROSPECTIVE STUDY, IN THE SOUTH-INDIAN POPULATION.

Orthopaedics

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ABSTRACT

Introduction: Hip resurfacing arthroplasty (HRA) or Total hip replacement (THR), as it is popularly called, attempts to mollify these basic clinical problems, in patients with a hip arthritic problem, which may be of a sequela to age-related degeneration, osteonecrosis, systemic disorder like Rheumatoid arthritis (RA) or Ankylosing spondylosis (AS) or as a result of trauma and or an old infection. The basic pathology, is an unfavourable and abrading hip diarthrodial joint. The endeavour of the study was, to establish the efficacy of the Posterior vs Lateral approach for THA/THR, by studying their outcomes in primary THR. **Materials And Methods:** This prospective study was undertaken at Chettinad Hospital and Research Institute (CARE), Kelambakkam, Chengalpattu district, Tamilnadu, In the Department of Orthopaedics from Jan 2017 to Dec 2020 (48 months). The Functional outcome of hip surgery was measured using the Harris Hip Score, Oxford hip score and the WOMAC. Rivermead visual gait analysis (RVGA) method was used post-operatively to assess the gait. The Biomechanical outcomes of Abductor Gait Component, were individually assessed by EMG studies. **Results:** The Harris Hip Score, The Oxford Hip Score and WOMAC score, when the lateral approach was compared to the posterior approach pre-op and post-op in the 12 months minimum follow-up period, the laterally approached group fared better. The VAS score was equivocal. The comprehensive RVGA assessment also showed marginally better results for the laterally approached group as was the case with the Trendelenburg test score. The EMG studies for the Gluteus Maximus, Medius and the lateral rotators of hip also favoured the outcomes for the laterally approach hips. **Conclusion:** The supremacy of the Lateral Approach, over Posterior Approach, cannot be adjudged in a short-term follow-up study. It is thus opined that the Lateral Approach may be statistically and data wise superior, but the patient satisfaction, which is a major factor, is almost the same in both the approach groups. The follow-up needs to be atleast for a decade for us to be able to come to any meaningful conclusion. With regards to surgery like the Total hip replacement, which have a longevity factor exceeding 10 years, studies have to be followed up for periods in excess of 10 years.

KEYWORDS

Lateral approach, Posterior approach, Total hip replacement, Oxford hip score, Harris Hip Score, WOMAC, Rivermead Mobility Index, VAS, Trendelenburg test.

INTRODUCTION:

When a degenerative head femorale and an arthritic acetabulum, needs to be refurbished with an artificial joint, the procedure is called "Arthroplasty in total", of the hip. The major concerns these addresses are, pain on ambulation, pain at rest, a limping or deteriorating gait and a loss of freedom of ROM of hip, due to joint stiffness. Hip resurfacing arthroplasty (HRA) or Total hip replacement (THR), as it is popularly called, attempts to mollify these basic clinical problems, in patients with a hip arthritic problem, which may be of a sequela to age-related degeneration, osteonecrosis, systemic disorder like Rheumatoid arthritis (RA) or Ankylosing spondylosis (AS) or as a result of trauma and or an old infection. The basic pathology, is an unfavourable and abrading hip diarthrodial joint. The benefits accrued from the surgery are many due to which it has become so popular, both with the replacement arthroplasty surgeons and the relief seeking patients. The benefits are so munificent and time proven, that a patient, often with a bilateral hip problem, demands the surgery for the other hip, after getting satisfactory relief from the operated hip. So, benefits are to be "shown no mirror" as a proof of success, which are established for over five decades now, after Sir John Charnley performed the first THR operation at Wrightington Hospital in the year 1960 (4). The technology has advanced multifariously and multitudinously and is getting better by the year, if not by the month. However, the choice of the approach remains "Surgeon centric".

The surgeon is the "Master". He decides on the approach based on various parameters.

- The deformity degree existent, as of time of embarking on surgery.
- The inventory of the implant, that he has the freedom to choose.
- Whether or not, the patient is obese.
- Existence of incisions made during, previous surgical interventions.
- The "Gut" feeling, that "I know this approach is the Best".

The options available for any hip surgery to address for an Orthopaedic problem for a surgeon are the following:

- An anterior direct approach (Peterson and Smith approach).
- An Antero-lateral approach (Jones and Watson approach).
- A Lateral direct approach to hip and proximal femur.
- A Posterio-lateral approach (Gibson).
- A Medial approach to the proximal thigh and to the hip.

THRA has, kind of brought about a revolution in the treatment armamentarium of coxa arthritis. Surgical approaches, described in the text and published in literature, (Stephen Petis et. al) (2) have by far, have their own Disadvantages and Pros. One's that are popular are Posterior, Anterior and the Lateral. The west now a days "Swears" by the Anterior approach, but in South India, surgeons have more expertise in going by the Posterior or the Direct lateral approach. Further, apart from the choice of approach, which is surgeon centric, all have their technically complex intricacies, (Stephen Petis et. al) (2) which permits an efficient and safe "Aceto- Femoral Recon". All these approaches have their quantum of infection rates, nerve inadvertent injury, Abductor lurch, risk of Coxa dislocation and in osteoporotic bone, the risk of a fracture (periprosthetic and during primary surgery, while reaming and rasping). Notwithstanding all these Cons, the two of the aforesaid approaches, have stood the test of time, and primarily the goal is not just early but sustainable return to a functional outcome, which qualifies for a robust QOL. Certain technical pearls have to be followed to the "Tee". The matter of choice of surgical approach, has its basic bearing on the fact that there needs to be, an optimised visualisation of a "Aceto femoral zone" (AFZ), which are in need for a "preparation" prior to "fixation" of the prosthesis. (Charnley J, Information ClfH, Light TR).

The use of the Lateral approach, is that it can give direct access to the proximal femoral shaft (1). Further, it is an inter nervous approach. No nerves or arteries are put to any incumbent iatrogenic risk. It is only the

matter of the perforators which come from the posterior direction, along the aspect lateral of the proximal femora. Prior to transection, they need to be cauterised. Or else they shall medial to the femur, retract and later cause bleeding, haematoma formation and act as a culture media for infection to prosper, and necessitate irrigation / debridement surgery, post THR.

Campbell, called the Jones and Watson approach to be a Lateral Approach, this unlike the Harris approach, does not have a trochanteric osteotomy. The Hardinge approach splits the TFL and the Abductors are erased from the trochanter major and are retracted in a supero-posterior direction. This has the advantage of permitting a dislocation of the hip anterior wards (11). Care must be taken with regard to danger of denervating the TFL (superior gluteal nerve), if the split is carried out, too much proximally. Going too far anteriorly also puts the femoral artery and nerve into danger (7)(10). The Circumflex femoral artery that is medial is at danger, if the inferior dissection is not carried out carefully, in an attempt to erasing iliacus or psoas muscle from the trochanter smaller.

The Postero-Lateral Approach of Gibson, gives excellent access of the hip joint, without having to release significant number of muscles. This again is an inter nervous plane wherein, the muscles that are intervened by femoral nerves, lie anteriorly and postero-medially we have the Sciatic Innervated muscles. Theoretically, there exists a higher risk of prosthetic dislocation when compared to the Antero lateral approach to the hip. The sciatic nerve (far medial) needs to be protected. This is achieved by retracting the external rotating coxa muscles as they find their attachment to the larger trochanter. This approach is not suitable in case of children with open physis, as there is a risk of jeopardising the capsular blood supply to femoral epiphysis at the postero-superior capsular corner. Care is also taken not to take the split between the Medius and maximus Gluteal muscles, too far proximal, which shall endanger the SGL nerve, that innervates the Medius and minimus gluteal muscles and also the TFL (3). Any peril to this nerve leads to gait abnormalities, postoperatively, due to weakness of the abductor mechanism of the hip (8)(9).

The endeavour of the study was, to establish the efficacy of the Posterior vs Lateral approach for THA/THR, by studying their outcomes in primary THR. To evaluate, not just the Functional and Radiological outcomes, but with emphasis on post-operative gait Bio-mechanics, the Trendelenburg test and to evaluate the Electro Myo Graphic Readings of the Maximus, Medius gluteal muscles and of the Tensor Fascia Lata.

Aim and Objective:

The objective of the present prospective study done in the Department of Orthopaedics, Chettinad Hospital and Research institute, Kelambakkam, Chengalpattu district of Tamilnadu, was to determine the following parameters and then to compile the result, analyse them and come to a conclusion as to which of the two (Direct-lateral or Postero-lateral) approach, gives a better functional outcome, with respect to both pain amelioration and restoration of near normal gait bio-mechanics.

1. To analyse the Gait of the post THR patient, at the end of 12 months. Also, to determine if there exists a Trendelenburg component in it.
2. Functional and Radiological parameters as assessed by the Oxford Hip Score, Harris Hip Score and the WOMAC.
3. Assess the Musculus Gluteus Maximus and Medius, Tensor Fascia Lata functionality, by doing a dedicated EMG study, at the end of 12 months.

Materials and Methods:

This prospective study was undertaken at Chettinad Hospital and Research Institute (CARE), Kelambakkam, Chengalpattu district, Tamilnadu, In the Department of Orthopaedics from Jan 2017 to Dec 2020 (48 months). The recruitment however, stopped at December 2019 (36 months of recruitment), so that we would have a minimum follow-up period of twelve months (1 year) (range:12-47 months). Consent that was written and signed not only by the patient but with two of their close blood relative and attested by the main and the assistant surgeon, so that their Radio-Functional reports, could be published, with due secrecy being maintained about their privacy. All parameters for evaluation, were evaluated at the end of 1 year, Post THR surgery and the results tabulated and analysed, to come to a

conclusion, as to which approach (Direct Lateral or Postero Lateral) was able to deliver better not just Functiono-Radiological outcome, but also amelioration of pain and restoration of near normal Hip Abductor Biomechanics.

66 subjects were part of this study undertaking. 6 patients had insufficient follow up evaluation and hence excluded from this exercise after initial assessment, post-surgery. 60 patients were then finally included in the study.

INCLUSION CRITERIA:

Any patient with hip arthritis or unstable hip with

1. Age more than 21 years (Skeletally mature)
2. Preoperative electro myography to assess the function of the Gluteus Maximus, Gluteus Medius and Tensor Fascia Lata.
3. THR being necessitated as a result of Degenerative osteoarthritis, Rheumatoid arthritis, ankylosing spondylitis, Post-Traumatic arthritis, osteonecrosis, Neck of femur fracture and resultant after Non-union (established or impending), after fracture neck of femur.

EXCLUSION CRITERIA:

1. Age less than 21 years and more than 80 years
2. Preoperative abnormal EMG study, for Gluteus Maximus, Gluteus Medius, Tensor Fascia Lata.
3. Dysplastic hip sequelae
4. Arthritis as a component arising after Septic Arthritis or Tuberculosis.
5. Patient with generalized neurological disorders, or with post-polio residual paralysis.

Patients were operated either by the First Author (Team A) or the Corresponding Author (Team B), heading the surgical team. The remaining authors, were the part of the assisting team. Allocation of patients to either Team A or Team B was randomised.

All of them were admitted 2 days prior to undergoing THR/THA. A comprehensive history and clinical examination were also done. Pre-operative assessment of range of movements, pain, Function, Trendelenburg test and Pre-op EMG assessment was also done. Appropriate, Nasal, Oropharyngeal, Blood and Urine culture sensitivity tests were done. RTPCR for COVID was mandatory for all the patients after March 2020.



Fig.1 [a]- Palpating for and appropriate level, electrode fixation for TFL



Fig.1 [b]- Palpating for and appropriate level, electrode fixation for TFL



Fig.1 [c]- Palpating for appropriate level fixation for Gluteus Maximus electrodes

Positioning and Surgical Methodology:

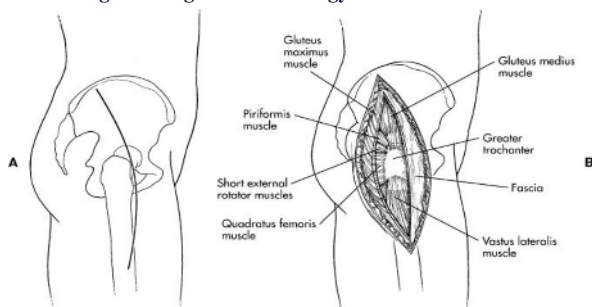


Fig.2: Orientation of the lateral approach

For the lateral approach the patient is positioned supine on a sand bag. The modified Hardinge approach was used in all cases. We made a posteriorly directed lazy-J incision focused over the greater trochanter. Divided the Fascia Lata parallel to the skin incision and centering over the Greater Trochanter. We then retracted the TFL, Anteriorly and the Musculus Gluteus Maximus, Posteriorly, thereby exposing the Vastus Lateralis muscle origin and the Gluteus Medius muscle insertion. We then, Incised the Gluteus Medius tendon obliquely, across the Greater Trochanter, and the posterior half was left attached to the Trochanter. The incision was carried proximally, parallel to the fibers of the Musculus Gluteus Medius, at the conjunction of the Anterior and Middle third of the muscle. Then distally, we carried the incision posteriorly, parallel to the fibers of the Vastus Lateralis muscle, deep to bone along the Antero-lateral femoral surface. Elevate the tendon insertions of the Vastus Lateralis muscle and the Anterior portions of the Musculus Gluteus Minimus. Thigh was then abducted to expose the Hip joint, and the Anterior Capsule. The Capsule was then incised and the Hip Dislocated. During closure, the Musculus Gluteus Medius tendon was repaired with non-absorbable braided sutures.

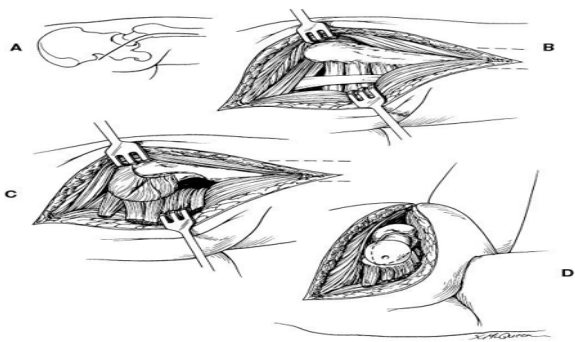


Fig.3- Orientation of the Posterior approach

In Posterior Approach, the patient was placed on the normal side. We started the incision, roughly 10 cm distal to Postero-superior Iliac Spine and extended it laterally and distally in line with the fibers of Musculus Gluteus Maximus to the Greater Trochanter, posterior margin. Then, we directed the incision, 10 to 13 cm, in line with the Femoral Shaft. We, then Exposed and divided the deep fascia parallel to the skin incision. A blunt dissection was then made to separate the fibers of the Musculus Gluteus Maximus; taking care not to disturb the Superior Gluteal Vessels and nerves in the proximal part of the exposure. We then retracted the proximate fibers of the Musculus Gluteus Maximus proximally to expose the Greater Trochanter. We subsequently, retracted the distal fibers and partially divided their attachment, to the Linea Aspera parallel to the incision. Later, divided the Short lateral Rotators at their femoral attachment and retracted the muscles medially. The posterior part of the joint capsule was now well exposed; we then incised it from the distal to proximal, parallel to the neck of femur and the acetabular rim. We, then flexed the thigh and knee to 90 degrees, and internally rotated the thigh, and dislocated the hip posteriorly.

The Acetabulum and the Femur, were then reamed to their appropriate sizes and then the prosthesis was inserted. The use of Methyl Methacrylate was left to the discretion of the individual surgeon and the quality of the bone as gauged at the time of surgery. All the patients were placed in an Abductor Pillow, in the operating room itself. Beginning on the night of surgery, all patients received Mechanical

Prophylaxis for Thrombo-embolism through, the ankle foot pump exercises and the calf muscle squeezing. All the patients received anti coagulants by means of LMW Heparin at a dose of 40 mg once daily for a period of 5 days. DT removal was done on POD 2. IV antibiotics, Cefepazone and Sulbactam 1.5gms IV BD was given for 72 hours. Oral drug switch over, to Linezolid 600mg BD, with Clindamycin 300 mg BD were considered in patients with diabetes, for an additional period until suture removal, done usually on POD 12. Post operatively, all patients followed a physical therapy regimen while in bed, including isometric knee extension and hip abduction, beginning on the POD 2. Ambulation also was permitted on the POD 2 after drain removal and a check radiograph was taken. Patients treated with cemented arthroplasties were allowed partial weight-bearing as tolerated with walker, beginning on the POD 2 after surgery. Patients treated with uncemented arthroplasties were allowed 10 % weight-bearing (toe touch) with walker, beginning on the POD 2. Toe touch weight bearing was continued for six weeks and then progressed to full bearing of weight, in a gradual manner between six and 12 weeks.

All the operated patients were examined and their results recorded at week 4, 8 and 12 sequentially. Thereafter the follow-up was, in intervals of 3 months. Final evaluation and tabulation of results, were done at the end of 12 months.

The Functional outcome of hip surgery was measured using the Harris Hip Score, Oxford hip score and the WOMAC. Rivermead visual gait analysis (RVGA) method, which was described by S.E. Lord was used post-operatively to assess the gait (12). The Biomechanical outcomes of Abductor Gait Component, were individually assessed by EMG studies.

The modified Rivermead Mobility Index

Activities	Date		
Turning Over Please turn over from back to your R/L side.			
Lying to Sitting Please sit up on the side of the bed.			
Sitting Balance Please sit on the edge of the bed (approx 10 sec).			
Sitting to Standing Please stand up from your chair (patient takes less than 15 sec).			
Standing Please remain standing (approx 10 sec).			
Transfer Please go from your bed to the chair and back again (Chair on the unaffected side).			
Walking Indoor Please walk in your usual way (10 meters).			
Stairs Please climb up & down a flight stairs in your usual way.			
Total			
Signature of the Assessor			

Scoring

- 0 Unable to Perform
- 1 Assistance of 2 People
- 2 Assistance of 1 Person
- 3 Requires Supervision or Verbal Instructions
- 4 Requires an Aid or an Appliance
- 5 Independent

RESULTS:

Out of 66 patients (31 Males and 35 Females) who underwent THR/THA 35 patients had Modified Hardinge Approach and 31 patients had posterior approach. The Mean age of patients who participated in this study was 46.4 (21-79 years). Follow-up was done for up to 1 year. Out of 66 post-op THR/THA patients 6 patients were lost for their follow-up and hence were not included in this present study.

Table 1: Distribution table of the various cases, in the present study of THR

Primary Total Hip Arthroplasty									
Fresh Traumatic Causes (Neck of Femur Fracture)				Non fresh traumatic causes (Post Traumatic Arthritis, Non-Union Neck of Femur and AVN)				Non traumatic causes (Rheumatoid Arthritis, Ankylosing Spondylitis, Degenerative Osteoarthritis of the hip joint and AVN)	
Cemented THR	Uncemented THR	Cemented THR	Uncemented THR	Cemented THR	Uncemented THR	Cemented THR	Uncemented THR	Cemented THR	Uncemented THR
Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
4	7	3	8	6	7	4	3	3	4
								5	6

Table 2: Data complication of the various cases, in the present study of THR

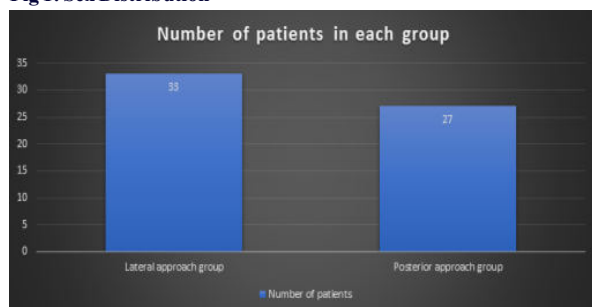
Parameter	Number of Male who underwent THR	Number of Female who underwent THR	Total
Cemented	13	18	31
Uncemented	12	17	29
Total	25	35	60

The patients were assessed functionally by Harris Hip Score, Oxford Hip Score and WOMAC. Pre-op assessment for functional scoring was done only for Non traumatic cause patients (Rheumatoid Arthritis, Ankylosing Spondylitis, Degenerative Osteoarthritis and AVN) and Non fresh traumatic cases (Post Traumatic Arthritis, Non-union Neck of Femur and AVN) only. We found a significant difference in both the scoring systems between the posterior and the Modified Hardinge Approach (Direct Lateral Approach).

The Pre-operative mean Harris Hip Score for Lateral approach was 42.63 and for the patient group who underwent Posterior Approach for THR/THA had a mean HHS as 38.40. HHS was calculated post-operatively for both the groups and Lateral approach group had a post-operative mean HHS at the end of 1 year as 86.40 and that of Posterior Group was 78.65. There was thus an improvement in the HHS pre-op and post-op of 43.77 for the Lateral Approach Group and 40.25 for the Posterior Approach Group. In this analysis, the Lateral approach fared better.



Fig 1: Sex Distribution

Fig 1: Sex Distribution**Fig 2: Number of patients in each group**

Oxford Hip score: Pre-operative score for patients who underwent lateral approach: 17.71 and that for patients who underwent posterior approach had 18.451 which significantly improved post operatively to 45.14 and 43.06. There was significant improvement between the pre-operative and post-operative Oxford functional score of 27.42 and 24.61 for direct lateral and posterior approach respectively. There was a total difference of 2.81 between the Lateral and Posterior approach, with the Laterally approached cases fared better.

WOMAC score: Pre-operative score for patients who underwent Lateral Approach was 32.8% and for Posterior Approach group was 34% and post operatively, improved WOMAC scores for lateral and posterior group were 92.1% and 87.7% respectively. Here again, the Laterally approached cases fared better.

Table: 1 Mean Functional outcome scores

Functional scoring systems	Lateral approach group		Posterior approach group	
	Pre-op	1-year Post-op	Pre-op	1-year Post-op
Harris Hip Score	42.63	86.40/100	38.40	78.65/100
Oxford Hip Score	17.71	45.14/60	18.45	43.06/60
WOMAC score	32.8%	92.1%/96	34%	87.7%/96

Pain was assessed using the Visual analogue score pre-operatively and post-operatively for all the patients who underwent the study. The mean pre-operative VAS score for lateral approach was 6.37 and for patients who underwent posterior approach had a mean VAS of 6.81. Post-operatively the VAS pain score for lateral and posterior approaches were 4.17 and 4.26 respectively. There wasn't a significant difference in the pain scale between the posterior approach group and the direct lateral approach group at the end of 1 year. Pain is an important consideration in any post-operative outcome analysis. This factor alone was kind of equivocal for both the approaches.

Table 2: Mean Pain assessment score

Pain assessment score	Lateral approach group		Posterior approach group	
	Pre-op	1-year Post-op	Pre-op	1-year Post-op
Visual analogue score	6.37/10	4.17/10	6.81/10	4.26/10

Gait Assessment: RVGA Method (12):

Apart from the Rivermead mobility index, this comprehensive RVGA assessment takes into consideration step asymmetry of length, the stride length and the walking time.

Pre-operatively, the mean RVGA Gait Score for lateral approach group was found to be 24.7, whereas for the posterior group it was 23.4. Postoperatively, there was an improvement in the mean RVGA Score. The mean improvement in the lateral group was 7.1 for the lateral group, and 9.3 for the posterior group. Overall, the lateral group showed significant improvement in gait when compared to the posterior group.

Gait Assessment	Lateral approach group		Posterior approach group	
	Pre-op	1-year Post-op	Pre-op	1-year Post-op
RVGA Gait Score	24.7	7.1	23.4	9.3

The Trendelenburg test for Gait Analysis:

Pre-operative score for Lateral and Posterior approach groups were 5.65 and 5.17 respectively. Trendelenburg test was done post-operatively and the improvement were 2.76 for the Lateral Group and 3.46 in the Posterior Group. The mean improvement was better with Lateral Approach, than in patients underwent Posterior Approach.

Table 3: Mean Trendelenburg test score

Score	Lateral approach group (Out of 6)		Posterior approach group (Out of 6)	
	Pre-op	1-year Post-op	Pre-op	1-year Post-op
Trendelenburg test score	5.65	2.76	5.17	3.46

The Electromyography of the Gluteus Maximus and Gluteus Medius studies when done post-operatively between the lateral and the posteriorly approached Total hip arthroplasty, showed the readings were superior by 5% for Gluteus Maximus, 7% for Gluteus Medius and 13% for Lateral rotators of the hip for the laterally approached Total Hip Arthroplasty patients, when compared to patients with the Posteriorly Approached, Total Hip arthroplasty patients. Here in again, the Laterally approached hips fared better.

DISCUSSION:

The very first venture into the "Hip joint Arthroplastic Replacement" was carried out in the 1950s. History has taken its time to refine the surgical finesse on one hand and with the technology going hand in hand and with it the post-op "Rehab" programme has also emerged with a "vista" of refinement. This has made the procedure by itself not just effective but also successful. This makes it probably the front runners in the hip surgical interventions in "Modern surgery" Vikas Khandja (13).

Well, this is on one hand, keeping pace with enhanced longevity, the world has had to pay up a price, in the form of "Burden of Coxa arthritis". In 2010, Kurtz SM et al (14); reported 9 lakh 50 thousand THRA being done globally. The profiling of the subject needing THRA for "coxa arthritis" has also undergone a sea change. Gone are the days, when THRA was seen as a penance for the Degenerative Geriatric Coxa Arthritis, with relatively modest demand, from the replaced joints. Now a days, younger subjects have been recruited for THRA, for a multitude of conditions, as indications for primary THRA. They

have significantly higher functional demand from the replaced prosthesis. In a study done in 2019 by Jasvinder A singh et al (15); concluded that there is a statistically exponential growth of patients needing THRA and TKRA and this demand is evidenced, from a wide bracket of the age group, and from both the sexes alike.

In their studies, are carefully analysed, with a 95% prediction interval, they predicted by using polynomial pattern of regression, to be accounting for the non-linearity and the inter-action between the given variables, as the construed THRA to be of the "Poisson distribution" pattern. In order to account for over dispersion, they analysed the sensitivity of their figures, by developing "a binomial negative regression pattern, using data available with US - NIS (National Inpatient Sample) 2000-2014. There predictional increase for primary THRA in 2020, 2025, 2030 and 2040, are that these figures are likely to range by an incremental percentage of 34% for 2020, 75% for 2025, 129% for 2030 and 284% for the year 2040 respectively. Compounding the problem as outlined by Nath et al; our Indian presentation of "coxa arthritis" are late ones, because of the higher tolerance for pain.

Coxa arthritis has no definitive medical care. Nutraceuticals and their combinations, with physio therapeutic measures can give only palliation, for a specified period of time. Eventually the answer lies in a surgical remedy in the form of THR/THA.

It is a well-known fact that, for relief of coxa arthritis, the solution is THR/THA, but the options commonly adhered to are the approach from Posterior aspect or from the approach that is surgically Directly Lateral. "Fear" of dislocation compounds the former approach, apart from stretch injury to the Nerve Sciatic. In, as far as, cup positioning is concerned, with an outlook to reduce hip from being in danger of dislocation and almost eliminating the danger to sciatic nerve palsy, the Direct Lateral approach seems appealing.

The fact remains true that for any surgery, a direction of approach has to be adopted. Not to refrain from the fact that, both the aforesaid approaches give excellent hip joint exposure for executing a THR/THA. The literature as of date has tried to debate the benefits and the disadvantages for both the above procedural approaches, and complications are to be expected even in the most experienced of hands. The question is are we looking at "Ease" or "Tease" of the problems of complications. In order not to compound our complication rates, we have kept out the infective hip pathologies leading to coxa arthritis, out of the gamut of this particular study.

The lateral approach with its "comfort zone" is a potential risk for making a person after THA "Limp", due to abductor weakness (5). While many studies have failed to conclude at a "peerless" choice for the approach surgically for THA/THR which are basically primary, we beg to differ from their observations. Both the operating surgeons are well versed with both the procedures surgically and there is no reason to believe that there exist any "lacunae" in the "learning curve" of their surgical finesse. Further our study has enough evidence to show that the ROM in the Posterior Approach is far superior. The chances of dislocation are the same for both the approaches. But the electromyographic post-op studies and the Trendelenburg parameter with limp analysis, makes us worry of more chances of nerve damage to the Abductor Gait Mechanism, than the Posterior Approach results manage to offer. The rate of gait mimicking the Trendelenburg was as dictated by Hardcastle in 1985 (6). We relied, not only one score of hip joint but on score of scores "Mean", which included the Harris Hip Score, the Oxford Hip Score and the WOMAC scores. We went on to look beyond, range of movements and limb length discrepancy. Pain at the end of 12 months post-op was contrasted with pre-operative score of pain dictated by VAS. EMG study of G Max, G Med and NCS for SGN were also pooled in, towards the compilation of data.

CONCLUSION:

From the foregoing discussion, we are in the favour of Direct Lateral Approach rather than the Posterior Approach. For more than 2 decades, both the approaches have been used successfully in patients who are subjected to THR/THA, and proved beyond an "iota of doubt" that each has its supremacy and efficacy established. Our present study, primarily aims at the abductor lurch that the Posterior Approach, unfortunately gives the patient, which in practical terms means an innocuous limp. However, Hip Replacement surgeries are done to last over 15 years. Hence, the supremacy of the Lateral Approach, over Posterior Approach, cannot be adjudged in a short-term follow-up

study (with a range of follow-up between 12 months-35 months). To be able to vociferously jump to the conclusion of superiority of Direct Lateral Approach, over the time-tested Posterior Approach would be, shortest to say "FOOLHARDY" and hence we desist from it. It may however be a "Food for thought" to follow-up the patients over periods lasting 10-15 years and only then coming to any "fructuous" opinion. It is thus opined that the Lateral Approach may be statistically and data wise superior, but the patient satisfaction, which is a major factor, is almost the same in the approach groups.

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