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"EFFICACY OF ARTHROSCOPIC JOINT DEBRIDEMENT IN OSTEOARTHRITIS KNEE WITH REGARD TO PAIN AND FUNCTIONAL IMPROVEMENT"

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ABSTRACT

Osteoarthritis is the most common form of arthritis and a leading cause of chronic disability, to a great extent in knee and/or hip joints. Osteoarthritis diseases are a result of both mechanical and biological events that destabilize the normal coupling of degradation and synthesis of articular cartilage, chondrocytes, extracellular matrix and subchondral bone. Although they may be initiated by multiple factors including genetic, metabolic, developmental and traumatic, osteoarthritic disease involve all of the tissues of the diarthrodial joint. Ultimately, osteoarthritic diseases are manifested by morphological, biochemical, molecular and biomechanical changes of both cells and matrix which leads to softening, fibrillation, ulceration, loss of cartilage, sclerosis and eburnation of subchondral bone, osteophytes and subchondral cysts. When clinically evident, osteoarthritic diseases are characterized by joint pain, tenderness, crepitus, and limitation of movement, occasional effusion and variable degrees of inflammation without systemic effects. The aim of the study is to study the efficacy of arthroscopic lavage and debridement in relieving symptoms of osteoarthritis of knee.

KEYWORDS: Articular Cartilage, Chondrocytes, Extracellular Matrix and Subchondral Bone

INTRODUCTION

Osteoarthritis is the most common form of arthritis and a leading cause of chronic disability, to a great extent in knee and/or hip joints. Osteoarthritis was the term originally proposed by John Spender in 1886. The terms osteoarthrosis and degenerative joint disease have a certain appeal but are nonspecific. Furthermore, they give no information about the pathologic processes that characterize the disorder. Arthritis deformans, as proposed by henin[1] in 1926, was for many years considered a synonym for osteoarthritis in European medical community.

"Degenerative joint disease will afflict most of us if we live long enough"

It is one of the oldest known diseases of mankind and is described as sandhigatavata in ayurvedic classical like Charak samhita and Ashtanga hridaya. The World Health Organisation estimates that osteoarthritis is a cause of disability in at least 10% of population over age 60 years[2]. Most commonly involved joint is knee.

Knee osteoarthritis alone was often associated with disability as were heart and chronic lung diseases. Women are more commonly affected.

Consensus Definition[3]

Over the 20th century, the definition of osteoarthritis has evolved from "hypertrophic arthritis" to the most common current consensus definition: "Osteoarthritis diseases are a result of both mechanical and biological events that destabilize the normal coupling of degradation and synthesis of articular cartilage, chondrocytes, extracellular matrix and

subchondral bone. Although they may be initiated by multiple factors including genetic, metabolic, developmental and traumatic, osteoarthritic disease involve all of the tissues of the diarthrodial joint. Ultimately, osteoarthritic diseases are manifested by morphological, biochemical, molecular and biomechanical changes of both cells and matrix which leads to softening, fibrillation, ulceration, loss of cartilage, sclerosis and eburnation of subchondral bone, osteophytes and subchondral cysts. When clinically evident, osteoarthritic diseases are characterized by joint pain, tenderness, crepitus and limitation of movement, occasional effusion and variable degrees of inflammation without systemic effects."

AIMS OF STUDY

- To study the efficacy of arthroscopic lavage and debridement in relieving symptoms of osteoarthritis of knee.
- To determine the indications of arthroscopy in osteoarthritis of knee.

Anatomy

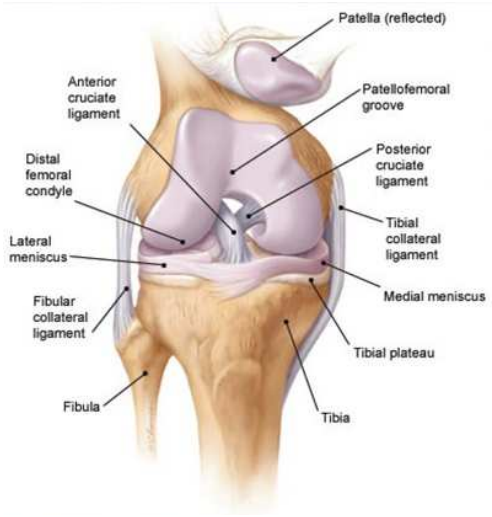


Figure 1

The knee is the largest joint in the body and it is also one of the most complex joint, made up of four bones femur, tibia, fibula and patella. These are connected by muscles, ligaments and tendons.

Patellofemoral Joint

It is a synovial joint. The articular surface of the patella is adapted to that of femur, which extends onto the anterior surfaces of both condyles like inverted U. whole area is an asymmetrical sellar surface. The odd facet contacts the lateral anterior end of the medial femoral condyle in full flexion, when the highest lateral patellar facet contacts the anterior part of the lateral condyle. As the knee extends, the middle patellar facets contact the lower half of the femoral surface and in full extension only the lowest patellar facets are in contact with the femur. In summary, on flexion the patellofemoral contact point moves proximally. The contact area also broadens to cope with the increasing stress that accompanies rising flexion.

Tibiofemoral Joint

The tibio-femoral joint is complex synovial joint. The proximal tibial surface slopes posteriorly and downwards relative to the long axis of the shaft. The medial articular surface is oval and longer than the lateral tibial condyle. Around

its anterior, medial and posterior margins it is related to the medial meniscus and the meniscal imprint, wider behind and narrower anteriomedially.

The lateral condyle overhangs the shaft posteriorly above a small circular facet for articulation with fibula. The articular surface is more circular and coapted to its meniscus.

Intercondylar Eminence

The rough surfaced area between the condylar articular surfaces is narrowest centrally where there is an intercondylar eminence the edges of which project slightly proximally as the lateral and medial intercondylar tubercles.

Femoral Surface

The femoral condyles bearing articular cartilage are almost wholly convex. The shapes of their sagittal profiles are somewhat controversial. One view is that they are spiral with a curvature increasing posteriorly, that of lateral condyle more rapidly. An alternative view is that the articular surface for contact with the tibia on the medial femoral condyle describes the arcs of two circles. The anterior arc makes contact with the tibia near extension and is part of a virtual circle of large radius than the more posterior arc, which makes contact during flexion. Laterally there may only be single radius of curvature of single arc.

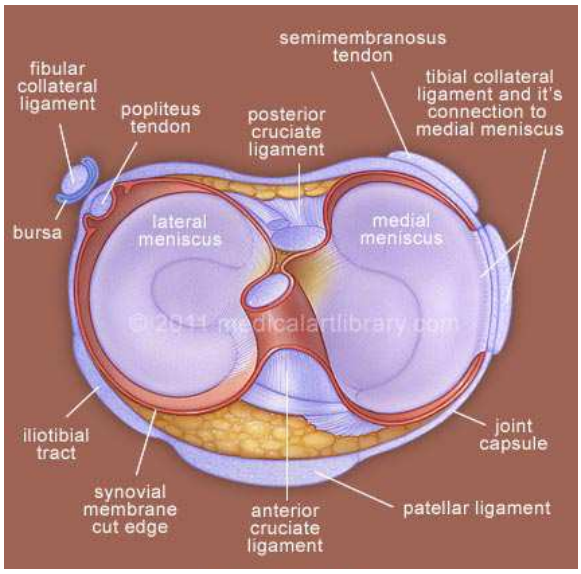


Figure 2: Coronal Section of Knee Joint

Menisci

The menisci are crescentic laminae deepening the articulation of tibial surfaces that receive femur. Their peripheral attached borders are thick and convex their free borders thin and concave. Their peripheral zone is vascularised by capillary loops from the fibrous capsule and synovial membrane, while their inner regions are avascular. They are two medial and lateral meniscus.

LIGAMENTS

Cruciate Ligament

These are very strong and are located a little posterior to the articular center. Synovial membrane almost

surrounds the ligaments but is reflected posteriorly from the posterior cruciate to adjoining parts of the capsule.

Anterior Cruciate Ligament (ACL)

It is attached to anterior intercondylar area of the tibia, just anterior and slightly lateral to the medial tibial eminence, partly blending with the anterior horn of the lateral meniscus. It ascends posterolaterally, twisting on itself and fanning out to attach high on the posteromedial aspect of the lateral femoral condyle.

Posterior Cruciate ligament

It is thicker are stronger than ACL. This is perhaps surprising because its rupture is better tolerated than that of ACL.

INERVATION OF KNEE JOINT

The knee joint is innervated by branches from obturator, femoral, tibial and common peroneal nerves. The genicular branch of the obturator nerve is the terminal branch of its posterior division. Muscular branches of femoral nerve, especially to vastus medialis supply terminal branches to the joint. Genicular branches from tibial and common peroneal nerves accompany the genicular arteries; those from the tibial nerve run with the medial and middle genicular arteries, while those from the common peroneal nerve run with the lateral genicular and anterior tibial recurrent arteries.

PATHOPHYSIOLOGY

Anatomic analysis and application of histopathological and imaging techniques have helped to define the natural history of osteoarthritis with respect to the structural alterations in the articular cartilage. It has been demonstrated that osteoarthritis is not exclusively a disorder of articular cartilage. Multiple components of the joints are affected by osteoarthritis including peri-articular bone, synovial joint lining and adjacent supporting connective tissue elements.

The characteristic structural changes in osteoarthritis include-

- The progressive loss of articular cartilage.
- Increase subchondral plate thickness.
- Formation of new bone at the joint margins (osteophytes) and
- The development of subchondral bone cysts.

In addition at the junction of the articular hyaline cartilage and adjacent subchondral bone in the region of the so called tidemark there is a remnant of calcified cartilage.

As osteoarthritis progress there is evidence of vascular invasion and advancement of this zone of calcified cartilage into the articular cartilage that further contributes to a decrease in articular cartilage and peri-articular bone may lead to modification of contours of the adjacent articulating surfaces. These changes as well as the accompanying alterations in sub chondral bone remodeling and modulus may further contribute to the development of an adverse biomechanical environment and enhance the progression of the articular cartilage deterioration.

Multiple factors have been shown to affect the progression of osteoarthritis including the presence of polyarticular disease, increasing age, associated intraarticular crystal deposition, obesity, joint instability, and malalignment, muscle

weakness and peripheral neuropathy. These factors can be segregated into categories that include hereditary contributions, mechanical factors and the effects of ageing.

There are several lines of evidence indicating that genetic factors contribute to the risk of osteoarthritis.

The articular surface plays an essential role in load transfer across the joint and there is good evidence that conditions that produce increased load transfer and/or altered patterns of load distribution can accelerate the initiation and progression of osteoarthritis.

Whereas it is clear that mechanical and genetic factors play major roles in determining the natural history of osteoarthritis, the primary risk factor for osteoarthritis is age. The aging process contributes to osteoarthritis pathogenesis in several ways. The first relates to the influence of the ageing process on the structural organization and material properties of cartilage extracellular matrix (ECM). Major components of ECM which consists of type II collagen and proteoglycan undergo structural changes during ageing process. In addition there is evidence of accumulation of advanced glycation end products (AGEs). This process has been shown to enhance collagen cross linked and likely is significant contributing factor to the increase in cartilage stiffness and altered biomechanical properties that has been observed with ageing.

The effects of synovial inflammation likely contribute to dysregulation of chondrocyte function in an analogous fashion, favoring disequilibrium between the catabolic and anabolic activities of the chondrocyte in remodeling the cartilage ECM.

Essential to the development of more effective strategies for treating patients with osteoarthritis and in altering the natural history of this disorder is an understanding of the cellular processes that regulate the functional activities of chondrocytes in both physiological and pathological conditions.

Improved techniques for monitoring the effects of therapeutic interventions on the structural and functional properties of cartilage matrix also are needed. In addition further insights into the role of peri- articular bone remodeling and synovial inflammation on the natural history and outcomes in osteoarthritis are necessary.

Despite decades of study, the relationship of pathology in the subchondral bone to cartilage breakdown in osteoarthritis is still an enigma. Interest in this relationship has increased recently because of observations that-

- Bone marrow edema may be related to both pain and bone remodeling in osteoarthritis.
- Osteocytes undergo metabolic changes related to bone remodeling and secrete cytokines that stimulate cartilage degeneration
- Focal osteonecrosis occurs in osteoarthritis suggesting common mechanism of disease.

Therefore, it becomes particularly important to understand the microenvironment of subchondral bone that results in altered osteocyte metabolism. The first step in understanding the physical microenvironment of the bone relevant to osteoarthritis is to establish the definitive temporal relationships among fluid dynamics, bone remodeling and cartilage degradation.

MANAGEMENT

Goals of managing osteoarthritis include controlling pain, maintaining and improving movement and stability of

affected joints and limiting functional impairment. Many options exist for management of osteoarthritis of knee.

Non Operative – this is always the first line of treatment. Surgical treatment is offered only after conservative treatment fails.

- **Educational and behavioral intervention: "Don't stand if you can sit and don't walk if you can ride"** Education of patients with osteoarthritis can reduce their pain and improve their quality of life. The aim is to provide patients with an understanding of the disease process, its progression and the rationale and implications of managing their condition.
- **Rest:** During an acute episode, bed rest is recommended to reduce the inflammation.
- **Weight loss:** Being overweight is the single most important potentially modifiable risk factor for the development of lower limb osteoarthritis. It can be achieved by diet and exercises.
- **Physical therapy interventions:** It improves functional capability and provides analgesic effect in osteoarthritis patients without exacerbating their symptoms. It should be individualized and patient centered so as to take into account factors such as age, co morbidity and overall mobility. It includes range of motion exercises, stretching exercises and muscle strengthening exercises.
- **Mechanical aids:** Load on the joint is decreased by using stick, crutches or walker. Patients should encourage wearing shock absorbing footwear with good medio-lateral support, adequate arch support and calcaneal cushion.
- **Traction:** used in acute inflammatory stages to separate the joint surfaces and to stretch the contracted capsule.
- **Pharmacological Treatment:**
    - Analgesics and anti inflammatory drugs
    - Intra articular therapy with Viscosupplementation or Hyaluronic acid Replacement, Intra articular Glucocorticoids.
    - Nutraceuticals (Glucosamine and chondritin sulphate).

Surgical Management: When non operative treatment of osteoarthritis of the knee joint fails to alleviate pain and knee function is compromised operative intervention is warranted. Various options available are:

Open debridement, Arthroscopic lavage and debridement, Arthrodesis, Denervation of joint, High tibial osteotomy and arthroplasty.

HOW LAVAGE WORKS

Various mechanisms have been explained for improvement in symptoms of osteoarthritis from arthroscopic lavage and debridement.

These Are

- Removal of cartilage debris, proliferation of synovium, osteophytes, etc, interrupts the joint degeneration – damage- the vicious circle of degeneration.
- Removal of mediators of inflammation such as cytokines.

- Cooling effect.
- By adjusting the osmotic pressure of synovial fluid and PH and by adding electrolytes to improve the intra articular environment, thus restoring normal secretion of synovial fluid and improving the nutritional supply of cartilage.
- Dilution of degenerative compounds.
- Disrupts the adhesions.
- Degenerated meniscus and loose bodies removal relieves the pain and locking.
- Placebo effect.

MATERIAL AND METHODS

Source of Data

Patients were selected and after obtaining written informed consent from them they were subjected to the said procedure in Nizambad Government College and hospital from June 2014 to June 2015, on a sample size of 50 knees.

Method of Collection of Data

Patients are selected from daily outpatient clinics and also specialty clinics (arthritis clinics) conducted once a week in the department at our hospital.

Inclusion Criteria

Men and women in age group of 45 to 70 years with primary osteoarthritis knee seeking treatment in Nizambad Government College and hospital who were not relieved of their symptoms with conservative management.

Exclusion Criteria

- Patients with secondary osteoarthritis.
- Patients who refused to give informed consent.

A thorough history was taken and clinical examination was done.

Standard anterio posterior and lateral plain radiographs of the knee were taken and grading was done by using The Kellgren and Lawrence system into 4 grades.

Operative Procedure

- Patient positioned supine over operating table, under spinal anesthesia and tourniquet was applied. Parts were scrubbed, painted and draped.
- With knee flexed 70 degrees the patellar apex palpated and standard Antero lateral portal and Antero medial portals are placed.

Following compartments are examined-

- Suprapatellar pouch

- Medial compartment
- Medial para patellar gutter
- Lateral para patellar gutter
- Patellofemoral joint
- Intercondylar notch
- Lateral compartment

We specifically defined arthroscopic debridement as

- Joint lavage that includes dilution of the concentration of degradative enzymes as well as removal of small, free, mechanically irritating products of chondral, meniscal or synovial degeneration.
- Removal of discrete chondral or osteochondral loose bodies.
- Partial menisectomy and/or
- Judicious chondroplasty
  - After examining the joint all degenerative tissue were removed
  - Loose body if there were removed
  - Menisci and Cruciate ligaments were examined. Torn and degenerated fragments were removed and menisci were balanced,
  - Thorough lavage was given with Normal saline, cartilage debris were be seen in wash fluid.
  - Skin incision was closed with 2-0 silk.
  - Sterile dressing and compression bandage was applied and tourniquet was deflated.

    Articular cartilage degeneration was graded according to the Outer Bridge's Arthroscopic classification.

- **Outer Bridge's Arthroscopic classification.**

  Grade 0: Normal

  Grade 1: softening and swelling of articular cartilage

  Grade 2: partial thickness fissures

  Grade 3: Full thickness fissures

  Grade 4: Bone exposed

Figure 3: Hypertrophy of Synovium

Figure 4: Meniscal Tear

Post Operative Management

- IV antibiotics and anti inflammatory drugs were given in routine.
- Quadriceps and Hamstring strengthening exercises given from 2nd post operative days, suture removal done on post operative day.
- Follow up: results evaluated using Knee Scoring System.

  Rational of the Knee Society clinical rating system.

KNEE SCORE

Pain

None	50
Mild or occasional	45
Stairs only	40

- Walking and stairs

Moderate	30
Occasional	20
Continual	10
Severe	0

Range of motion: (5^0=1 point) 25

Stability (maximum movement in any position)

ANTEROPOSTERIOR		MEDIOLATERAL	
<5mm	10	$<5^0$	15
5-10mm	5	6^0-9^0	10

10mm	0	10^0-14^0	5
		$>15^0$	0

SUBTOTAL =

FLEXION CONTRACTURE		EXTENSION LAG		ALIGNMENT	
5^0-10^0	2 POINTS	$<10^0$	5	5-10	0 POINTS
10^0-15^0	5	10^0-20^0	10	0-4	3POINTS EACH DEG.
16^0-20^0	10	$>20^0$	15	11-15	3POINTS EACH DEG.
$>20^0$	15			Other	20

Total Deduction=

KNEE SCORE=

Functional Score

Walking		**Stairs**		**Deductions**	
Unlimited	50	Normal up and down	50	>Assistance	
>10 blocks	40	Normal up, down with rail	40	1 Cane	5 Points
5-10 blocks	30	Up and Down with rail	30	2 Canes	10
<5 blocks	20	Up with rail, unable down	15	Crutches or Walker	20
Housebound	10	Unable	0		
Unable to walk	0				

OBSERVATION AND RESULTS

Table 1: Sex Distribution

Sex	Frequency	Percent
Male	**29**	**58**
Female	**21**	**42**
Total	**50**	**100**

Table 2: Side Involved

Side	Frequency	Percent
Right	**28**	**56**
Left	**22**	**44**
Total	**50**	**100**

Table 3: Weight Distribution

Over weight (BMI>25)	No. of patients	Percent
Normal	**31**	**62**
Over weight	**19**	**38**

Table 4: Loose Body

Loose bodies	Frequency	Percent
Present	20	40%
Absent	30	60%

Table 5: Meniscal Tear

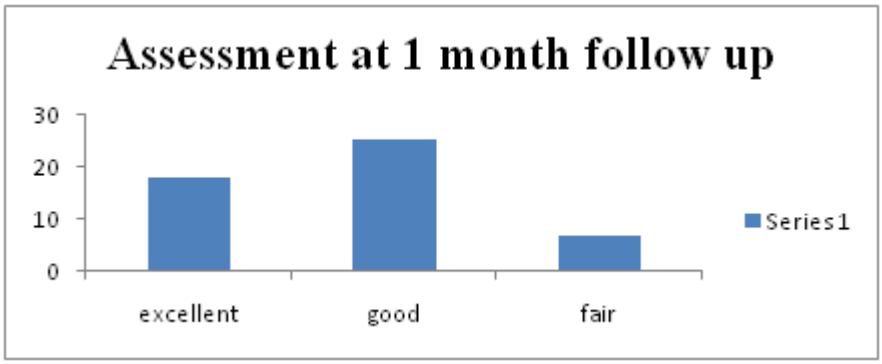
Meniscal tear	Frequency	Percent
Present	10	20%
Absent	40	80%

Table 6: Arthroscopic Grading

Grades	Frequency	Percent
I	4	8%
II	28	56%
III	12	24%
IV	6	12%

Table 7: Assessment at 1 month

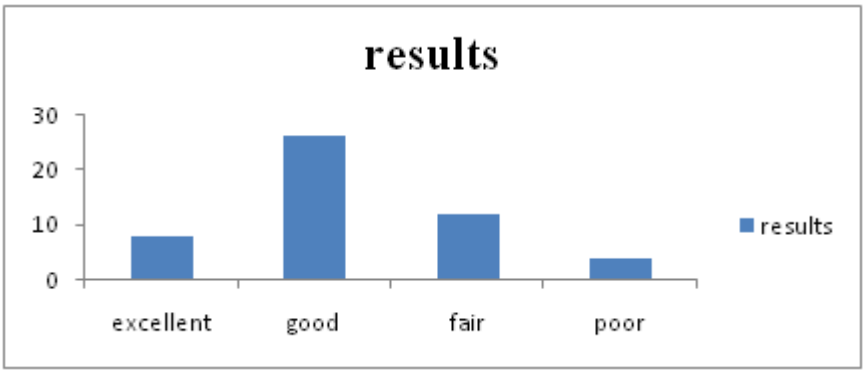
Results	Frequency	Percent
Excellent	18	36
Good	25	50
Fair	7	14



Graph 1: Follow Up At 1 Month

Table 8: Assessment at 3 Months

Results	Frequency	Percent
Excellent	8	16
Good	26	52
Fair	12	24
Poor	4	8



Graph 2: Follow Up at 3 Months

Table 9: Assessment at 5 Months

Results	Frequency	Percent
Excellent	8	22.2%
Good	11	30.5%
Fair	10	27.7%
Poor	7	19.4%

Table 10: Assessment at 7 Months

Results	Frequency	Percent
Excellent	6	20%
Good	7	23.3%
Fair	14	46.6%
Poor	3	10%

Table 11: Assessment at 9 Months

Results	Frequency	Percent
Excellent	6	20%
Good	7	23.3%
Fair	12	40%
Poor	5	16.6%

Table 12: Assessment at 12 Months

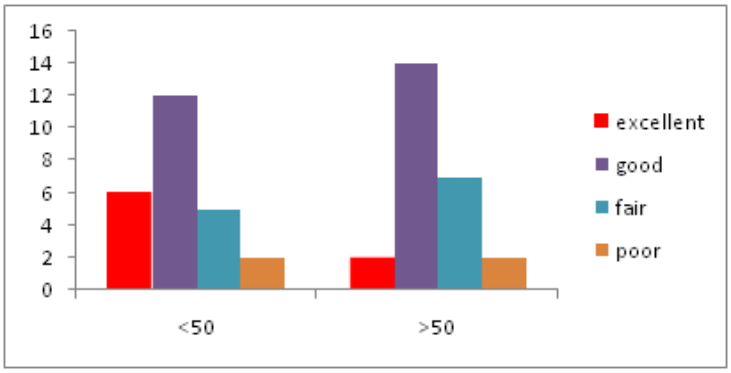
Results	Frequency	Percent
Excellent	3	12.5%
Good	9	37.5%
Fair	9	37.5%
Poor	5	20.8%

Graph 3: Follow Up at 12 Months

Table 13: Age Group Vs Results

Results	<50 yrs (n=25)	>50 yrs (n=25)	Total (n=50)
Excellent	6 (24%)	2 (8%)	8(16%)
Good	12 (48%)	14 (56%)	26 (52%)
Fair	5 (20%)	7 (28%)	12 (24%)
Poor	2 (8%)	2 (8%)	4 (8%)

P value = 0.141 ; df = 7; π^2=10.952



Graph 4: Age group Vs results

Table 14: Results versus Radiological Grading at 3 Months

Results	I (n=7)	II(n=27)	III(n=11)	IV(n=4)	Total
Excellent	5(71.4%)	2(7.4%)	1(9%)	0	8(16%)
Good	2(28.5%)	20(74%)	3(27.2%)	0	25(50%)
Fair	0	5(18.5%)	6(54.5%)	2(50%)	13(26%)
poor	0	0	1(9%)	2(50%)	3(6%)

P value = <0.001 ; df = 21; π^2=72.810

Table 15: Results versus Arthroscopic Grading

Results	I (n=4)	II(n=28)	III(n=12)	IV(n=6)	Total
Excellent	4(100%)	4(14.2%)	0	0	8(16%)
Good	0	20(71.4%)	5(41.7%)	0	25(50%)
Fair	0	4(14.2%)	6(50%)	3(50%)	13(26%)
poor	0	0	1(8.3%)	3(50%)	4(8%)

P value = <0.001 ; df = 21; π^2=63.308

Table 16: BMI versus Results

Results	BMI 18.5-25 (n=28)	BMI 25-30 (n=22)	Total (n=50)
Excellent	2 (7.1%)	6 (27.3%)	8 (16%)
Good	15 (53.5%)	10 (45.5%)	25 (50%)
Fair	9 (32.1%)	4(18.1%)	13(59.1%)
Poor	2(7.1%)	2(9.1%)	4(8%)

P value = 0.470 ; df = 7; π^2=6.613

DISCUSSIONS

In our study we performed arthroscopic lavage and debridement for fifty patients with primary osteoarthritis knee. We carefully examined the knee joint and then we did joint lavage that includes dilution of the concentration of degradative enzymes as well as removal of small, free, mechanically irritating products of chondral, meniscal or synovial degeneration, we removed discrete chondral or osteochondral loose bodies, did partial meniscectomy,

and/or judicious chondroplasty, removing unstable cartilage but taking care not to damage healthy cartilage nor to expose bare bone.

At the end of 3 months 86% of our patient were having significant improvement in their pain and function, 24% of the patients were having some pain relief whereas 8% patients were not having improvement. Those patients with poor outcome had severe osteoarthritis and had malaligned knee joint.

We have evaluated our results with variables like Body Mass Index, grade of osteoarthritis, malalignment condition of the articular cartilage and presence or absence of mechanical irritants.

Body Mass Index: Gunter Spahn[43] reported the outcome to be better in non obese and mild to moderate osteoarthritis. Similarly in our study it was seen that patients with normal Body Mass Index have better functional outcome and they are pain free for longer time as compared to obese patient.

Mai-alignment: Salisburg[16] and Jackson[38] underline the importance of minimal axial limb malalignment and biomechanical stable joints in achieving good results. In our study we have found out that patient with malalignment >10 degrees have poor outcome and their pain returns to pre operative levels within 6 months.

Radiological Grading: Gross et al were not able to show significant correlation between pre-operative radiological grading and the outcome but in our study we have found that there is significant correlation between these two and patient with grade I or II arthritis do well with the procedure. Patients with grade III arthritis had fair improvement. According to John Richmond[50] arthroscopic knee surgery is beneficial for mild to moderate osteoarthritis (Kellgren-Lawrence grade I and II).

Mechanical Irritants: Brian Day stated that patients with mechanical irritants such as loose bodies or degenerative meniscal tears are more likely to benefit from arthroscopic lavage and debridement. In our study we have found that all the patients who had loose bodies, osteophytes or meniscal tears had excellent to good results after arthroscopic removal of these and lavage. The response is long lasting. This clearly shows that in addition to the primary pathology they had additional symptoms of pain, locking and instability due to these mechanical irritants and lavage in addition to the above mentioned benefits has an additional advantage of removal of these irritants.

Judicious Debridement

Jackson[38] reported that over-debridement leads to poorer functional, outcome. We also suggest that the surgeon should be judicious in his debridement. The purpose of this surgical technique is not to restore the cartilage integrity or the lower limb alignment but to remove the intraarticular irritating factors with the purpose to alleviate the knee pain and to slow down the Osteoarthritis evolution.

Subjective Element: Moseley[57] et al attributed the success after the procedure to a washout or placebo effect. The weakness of his study resides in the low representative population-most of the patients were males from a Veteran Hospital, and in the absence of information about the meniscal pathology. We do not agree that the improvement is only subjective because long lasting symptom free outcomes cannot be attributed only to subjective element. Though subjective component does play a role.

The most important factor in determining success is proper patient selection, and many who have osteoarthritis of the knee will not benefit from arthroscopic debridement. In our experience patients who have end-stage osteoarthritis or

severe malalignment and those who do not have mechanical symptoms are unlikely to improve. The important considerations are how effective the treatment is and whether the expected benefits justify the risks, potential complications and cost. An objective analysis of outcome studies in patients who have osteoarthritis of the knee joint clearly shows that properly selected patients will benefit greatly from arthroscopic debridement and many will be saved from the increased morbidity and potential complications of alternative treatments.

Most of the published literature on arthroscopic lavage and debridement for osteoarthritis of the knee joint has comprised retrospective studies. The results vary among different observers and this modality of treatment is still controversial. Currently orthopaedic surgeons have not reached a consensus with regard to which patients should be applied this surgical procedure for the treatment of knee Osteoarthritis. Most of the authors report improvement in 50 to 80% individuals, however, as one would expect with the degenerative condition, results deteriorate with time but many were unable to identify pre-operative factors predicting long term results.

Indications for arthroscopic debridement of the Osteoarthritis knee do exist.This procedure may be even more important in young patients in whom it may buy some time for knee replacement. More so knowledge gained during arthroscopy may be helpful in deciding the future procedure such as high tibial osteotomy or knee replacement.

Decrease of the knee pain level is the most common short and medium term result obtained in selected patients by performing debridement arthroscopy for osteoarthritis. Patients must be counseled that in addition to the routine risks of knee arthroscopic surgery and anaesthesia, the results of arthroscopic debridement of the Osteoarthritic knee are not entirely predictable, the goals are limited and that their prognosis includes a likely need for future and additional arthritis treatment including a possible need for future reconstructive surgery.

CONCLUSIONS

- Arthroscopic Lavage and Debridement is an effective method of treatment for Osteoarthritis knee in selected patients.
- Patients with grade I and grade II osteoarthritis have good results and grade III osteoarthritis have fair results.
- Patients with normal body mass index have good results.
- Poor results are seen in knees with mal-alignment.
- Patients with symptoms of pain and locking due to loose bodies or degenerative meniscal tears benefit maximum from arthroscopic lavage and debridement.
- Arthroscopic debridement should be conservative, removing only fibrillated and scaling fragments of articular cartilage.

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