



ISKAST

newsletter

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President of Iranian
Society of Knee
Surgery, Arthroscopy,
and Sports Traumatology
(ISKAST)

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2nd

Biennial International
Congress of Iranian Society of
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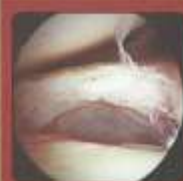
دومین

کنگره دوسالانه بین المللی
انجمن جراحان زانو،
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Editorial Message



M. Razi M.D.
ISKAST President

The first newsletter of Iranian Society of Knee Surgery, Arthroscopy and Sports Traumatology (ISKAST) is published simultaneously with the holding of the second biennial international congress of ISKAST.

Iranian Society of Knee Surgery, Arthroscopy, and Sports Traumatology had been organized in 1999, and till 2010 the scientific meetings of the ISKAST were combined by Iranian orthopedic association. The first biennial international congress of ISKAST was held in January 2010, and the second one in February 21st to 24th, 2012 in beautiful Kish Island which is a free zone in Persian Gulf.

The society has about 100 members who are all skilled orthopedic surgeons, and they have monthly scientific meetings. The congress is honored having the strong and famous international and local faculties.

In this issue we have published all the accepted great articles presented both in posters or orally.

We hope to see the scientific promotion and multidimensional cooperation of ISKAST with alternative scientific groups in future.



M. Jabal ameli M.D
Congress President

Congress President's Welcome

Dear friends and colleagues;

It is a great pleasure to invite you to attend the 2nd biennial international congress of Iranian Society of Knee Surgery, Arthroscopy and Sports Traumatology, ISKAST. Dated on February 21-24, 2012, Taking place in the international convention center of Kish Island in Persian Gulf, Iran.

The congress aims to promote our understanding of Knee surgery, total knee arthroplasty, arthroscopic surgery of all joints, and sports Traumatology as multidimensional orthopedic concerns. By bringing together all clinical professionals with an interest in orthopedic sport's medicine and arthroscopic surgery and all the specialties that deal with sports traumatology, the congress promotes exchange of basic and clinical science ideas and awarding for new thoughts in an effort in order to reach a better way for treatment of patients and athletes as well as an increase in the quality of research in these fields.

The four day congress will include an excellent variety of educational opportunities such as keynote lectures, paper presentations, lectures, debates, symposia, hands on workshops, instructional course lectures and technical exhibits. We will provide a variety of new therapeutic, prophylactic and specific techniques and skills. All will be available not only for orthopedic surgeons, but also for sport's medicine specialists, rehabilitation doctors, physiotherapists, and all related specialties.

We hope you enjoy this congress.



ORAL Presentations of 2nd ISKAST Congress



Clinical Assessment of Arthroscopic Osteochondral Autograft Transfer (Mosaicplasty) for Cartilage Defects of the Knee. A Prospective Medium-Term Follow-up Study.

Sohrab Keyhani, Assistant Professor of Orthopedic Surgery

Order of Authors: Sohrab Keyhani, Assistant Professor of Orthopedic Surgery; Seyyed Reza Sharifzadeh, Assistant Professor of Orthopedic Surgery; Mohammad Reza Abbasian, MD, Orthopedic Surgeon; Alireza Eajazi, MD, Research Assistant; Tauraj Shafaghi, Assistant Professor of Orthopedic Surgery; Soheil Mehdipour, MD, Orthopedic Surgeon; Majid Boreiri, MD, Research Assistant

Abstract:

Purpose: The objective of this study is to evaluate the clinical outcomes of arthroscopic mosaicplasty in people with advanced cartilage defects of the knee as well as studying the factors influencing the clinical outcome.

Method: This is a before and after clinical trial on 56 patients with grade 4 chondral lesion (according to the Outer-bridge classification) who underwent arthroscopic mosaicplasty from April, 2006 through April, 2008. The International knee documentation committee (IKDC) score and Lysholm knee scaling score were used to evaluate the therapy outcome. Furthermore, the impact of factors such as age, the afflicted condyle, number of plugs, presence of accompanying lesions, level of activity before surgery, tourniquet time, and complications of surgery were studied. Three patients underwent a second-look arthroscopy so that their site of repair may be observed directly.

Results:

We performed surgery on 56 knees of 56 patients. The patients were followed up over an average period of 21 ± 4 (Range 16-32) months. Using the IKDC scoring, 78.6% of our patients fell into the excellent category, while the 21.4% yielded good outcomes. The LKSS after surgery was 93.2 ± 6.4 which was significantly improved compared to the figure before surgery (67.1 ± 17.5 ($p < 0.05$)). The clinical outcomes were better in patients with accompanying articular lesions, lateral condyle lesions, professional athletes and young patients ($p < 0.05$). In addition, cases with fewer plugs and sport injuries were associated with better outcomes ($p < 0.05$). We observed early complications in two of our patients, both of whom recovered with appropriate therapy.

Conclusion: The findings of our medium-term study indicate that arthroscopic mosaicplasty proves an appropriate option for advanced cartilage lesions of the knee, particularly when it is performed for younger patients alongside other disorders of the knee.

Keywords: Arthroscopy, Osteochondral Autograft Transfer, Mosaicplasty, Cartilage Defects, Knee



The effect of platelet gel growth factors on proliferation and differentiation of bone marrow mesenchymal stem cells to osteoblasts and osteogenesis

*Amirizadeh N*1, (PhD), Amani M (MS), Malekan H2. (MD),*

Introduction:

Mesenchymal stem cells (MSCs) are bone marrow populating cells, which possess an extensive proliferation potential and ability to differentiate into various cell types, including: osteocytes, adipocytes and chondrocytes. The main source of MSC is the bone marrow. These cells constitute, however, only a small percentage of the total number of bone marrow populating cells. Isolation and expansion protocols for clinical scale production of MSCs use fetal bovine serum (FBS) as a supplement, which poses a potential risk for infections as well as immunological reactions. Autologous Platelet Gel is made from a natural component of the patient's own blood. Activated platelets release growth factors that are mitogenic for MSCs. In vitro studies have indicated that concentration of growth factor varies according to platelet concentration, methods of preparation and mechanism of platelet growth factors release. The aim of our study was to investigate the effect of platelet growth factors on the proliferation and differentiation of human mesenchymal stem cells.

Material and methods:

MSC were expanded in FBS 10% or platelet growth factors. The expanded cells were characterized by flow cytometric analysis of specific surface antigens. Analyzed markers included: CD45, CD34, CD166, CD105, CD90, and CD44. The gel is formed by adding calcium and thrombin to platelet rich plasma (PRP). Treated PRP was incubated for 30 min, 6, 24, 48, 72 h in incubator. Samples were centrifuged and platelet gel supernatants harvested. Growth factor concentrations in supernatants were determined by ELISA. Human mesenchymal stem cells were cultured in the complete medium that supplemented with 10% FBS or Platelet growth factors for 8 days. The rate of proliferation was evaluated by MTT assay. Expanded cells were cultured in an osteogenic medium. After 2 weeks of culture, mineralization was assessed by Alizarin red staining and alkaline phosphates'. Expanded cells were seeded on calcium phosphate scaffold. Cells growth and morphology on scaffold were analyzed by SEM.

Results:

Isolation and expansion of MSCs in the complete medium supplemented with platelet growth factors were successful and morphology of cells was comparable with that of FBS. Cells were



highly positive for CD90, CD166, CD44 and CD105 and negative for CD34, CD45. There was no significant difference between expression of markers on cell expanded with platelet growth factors and FBS. We demonstrated that platelet growth factors provide a significantly higher proliferative effect on MSCs than those of FBS. MSCs cultured in the presence of growth factors maintain their osteogenic differentiation properties. Osteogenic differentiation was indicated by deposition of mineralized matrix stained with Alizarin red and increased expression alkaline phosphates.

Conclusion:

platelet growth factors can be used in place of FBS to provide a safer and more effective culture condition to expand MSC for clinical purpose. Mscs cultured in the presence of platelet growth factors maintain their osteogenic properties.

Key word: mesenchymal stem cell, osteogenesis, platelet gel, scaffold.

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Clinical Outcomes of One-Bundle Arthroscopic PCL Reconstruction with Achilles tendon Allograft

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PCL reconstruction is still a challenge in orthopedic surgery. It is technically demanding and clinical outcomes are controversial yet.

We are reporting our results for arthroscopic one bundle PCL reconstruction using Achilles allograft in our clinic.

From 2007 to 2011, 35 patients with PCL tear underwent PCL reconstruction with Achilles allograft.

Age of the patients ranged between 16 to 48 years and all patients were available for final follow-up.

Median of follow-up was 24 months. Median time from injury to surgery was 10 months.

Clinical evaluation included Lysholm knee score, International Knee Documentation Committee (IKDC) scores.

Average Lysholm knee score and IKDC scores in the last follow-up visit were 75 (36-90) and 60 (28-94), respectively.

All patients believed that they feel improvement in their knees after reconstruction particularly in sense of stability.

Although the results are still less successful than ACL reconstruction, relative success can be obtained with a single bundle PCL reconstruction technique.



Fresh Osteochondral Allograft for Large Osteochondral Defects of the Knee **Ghazavi MT, Pritzker KP, Davis AM, Aubin P, Cheah HK, Shasha N, Krywulak S, Backstein D, Pressman A, Gross AE.**

Mount Sinai Hospital, Toronto, Ontario, Canada

Abstract:

Management of the knees with post-traumatic large osteochondral defects is a challenge. These patients are young and often active in heavy activities so arthroplasty would not be a good answer for them. Use of fresh osteochondral allograft has been an established protocol at Mount Sinai Hospital in Toronto. We will present the long follow up of these grafts.

The first published follow up was in 1997 with report of results in 126 knees which was published in British JBS in 1997. Our encouraging clinical results for fresh small-fragment osteochondral allografts show that they are indicated for unipolar post-traumatic osteochondral defects of the knee in young active patients.

The second review was done in 2002 and published in the Journal of Arthroplasty. That study showed the survivorship of all grafts (plateaus and condyles) at 7.5 years was 85%. The survivorship of femoral condyle grafts at 10 years was 85%. Viable hyaline cartilage has been confirmed at 17 years.

Another report was published in JBJS in 2003 which was focused on tibial defects. It concluded that, fresh osteochondral allografts for large traumatic defects of the tibial plateau have provided a long-lasting and reliable reconstructive solution for a high-demand population. Meniscal allografts should be used when clinically warranted. All grafts were protected with a coincident realignment osteotomy when preoperative radiographs suggested that the allograft would be placed under increased load. Conversion to knee arthroplasty was required for approximately one-third of the patients at an average of ten years.

The highlights of patient selection, techniques, post-operative managements and results will be provided in the presentation.



Management of knee deformities associated with hip disease at the time of hip arthroplasty

By: M. T. Ghazavi MD FRCSC, Shafa Rehabilitation Hospital

Abstract:

Long standing hip diseases are often associated with abnormal knee conditions including deformities or laxity. One of these frequent situations is chronic long standing fixed adduction deformity of the hip which in most cases is associated with valgus deformity of the knee with or without laxity of MCL. In these cases the secondary situation in the knee should be addressed at the time of hip treatment otherwise knee deformity could compromise the results of hip treatment. In this scenario, remained adduction deformity of the knee could lead to prostheses recurrent dislocation or marked mal-position and edge loading of the cup that could result in early wear or increase chance of fracture in ceramic inserts. In this situation, valgus deformity of the knee should be corrected by varus osteotomy around knee which is possible in distal femur in most cases. We present our experiences with 19 cases of valgus deformity and/or instability of the knee at the time of hip arthroplasty who underwent distal femoral varus osteotomy at the time of hip arthroplasty. In all cases the union was obtained in reasonable period of time except for one case of delayed union. All cases improved in HHS and correction of the knee deformity at the time of hip arthroplasty did not compromise the results of hip arthroplasty. We strongly suggest correcting of knee valgus deformity/instability by varus osteotomy at the time of hip arthroplasty.



Kinematic evaluation of ACL reconstruction to compare stability and ligament loading in both single bundle and double bundle methods

Azin Zargham, BS, Karim Leilnahari, Ph.D, Soheil Mehdipoor**, MD*

Background:

One of the most frequent orthopedic clinical observations is direct and indirect knee injury which terminate ACL tear. Torn ACL reconstruction is highly recommended in an active patient. Surgeons employ numerous techniques for arthroscopic reconstruction of the ACL in which the ligament graft is fixed in a variety of ways. In this study knee stability in both single and double bundle techniques will be compared.

Methods:

A computer knee model was made to check the knee stability and ligaments tensions under the influence of both methods. This study is carried out, firstly at 30° of knee flexion under isolated posterior-anterior load, valgus torque and rotational torque. Secondly, an anterior load of 134N was applied in weight bearing flexion, from extension to 70° of flexion. Thirdly, the simulated model was loaded by a noncontact pivot force which can result in ACL tear.

Findings: The obtained analysis results of simulating showed no significant differences between two surgery techniques under isolated loading. But in the second bearing weight and third noncontact model, ligament tension in double bundle was 4 times greater than tension in each bundle of single bundle. The second single bundle weight bearing model showed at most 7mm replacement compared with double bundle. The third double bundle noncontact model was stronger than SB in case of valgus torque. Internal rotation amount in DB was also more in control.

Interpretation:

Biomechanically speaking, functional test result and knee stability in 3-D isolated movements in DB surpassed the one in SB.

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Modified Retro-Tubercle Opening-Wedge Versus Conventional High Tibial

Osteotomy

by Sahrab Keyhani, MD; Mohammad Reza Abbasian, MD; Seyed Morteza Kazemi, MD; Ali Akbar Esmailejah, MD; Hamid Reza Seyed Hosseinzadeh, MD; Ali Sina Shahi; Farzad Firouzi, MD

Abstract

Despite the fact that common surgical techniques for the treatment of genu varum usually correct the malalignment in the affected knee, these methods have significant complications and cause problems in the long term. Retro-tubercle opening-wedge high tibial osteotomy is among the newer techniques for the treatment of genu varum. The goal of this study was to compare the results of retro-tubercle opening-wedge high tibial osteotomy with those of medial openingwedge osteotomy.

In a randomized, controlled trial, 72 patients with varus knees who were scheduled for surgery were assigned into either the retro-tubercle opening-wedge high tibial osteotomy (n=34) or medial opening-wedge osteotomy groups (n=38). Groups were matched for age and sex. The position of the patella was compared with respect to the tuberosity and the upper tibial slope pre- and postoperatively. Patients were followed for an average of 13 months (range, 10-21 months). In the retro-tubercle opening-wedge high tibial osteotomy group, the length of the patellar tendon did not significantly differ pre- and postoperatively ($P>.5$); however, in the medial opening-wedge osteotomy group, a statistically significant shortening was noted in patellar tendon postoperatively ($P<.05$). Similarly, the tibial plateau inclination showed a statistically significant difference postoperatively in the medial opening-wedge osteotomy group, while the difference in the retro-tubercle opening-wedge high tibial osteotomy group did not reach statistical significance.



Translation and evaluation of test-retest reliability and validity of the Persian version of IKDC Questionnaire in Iranian patients following ACL and meniscal operations

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Objectives:

To translate and evaluate the test-retest reliability, internal consistency and construct validity of the Persian version of the IKDC questionnaire in Iranian patients after ACL and meniscus operations.

Patients and Methods:

After translation based on the Quality Of Life Assessment protocol, the IKDC, KOOS and SF-36 Health Survey were administered to a sample of 100 patients underwent for ACL and meniscus operations. The test-retest reliability were tested by use of an Intra-class Correlation Coefficient, the internal consistency by a Cronbach's alpha and the construct validity were tested by correlating the IKDC scores with KOOS subscales including pain, symptoms, ADL, recreation and sport activity, Quality Of Life and the physical and mental component summaries and the SF-36 Health Survey. In addition, the construct validity was measured by Pearson and Spearman correlation coefficient parameters.

Results:

A high test-retest reliability score was found with an ICC of 0.99. The Internal consistency was found as 0.90. A moderate to good correlation was obtained between the IKDC total score and KOOS subscales including pain ($r=0.67$, $P=0.0001$), symptoms ($r=0.55$, $P=0.0001$), ADL ($r=0.68$, $P=0.0001$), sport and recreation activities ($r=0.60$, $P=0.0001$) and Quality Of Life ($r=0.50$, $P=0.0001$). A good correlation was obtained between the total scores of the IKDC and physical component summary ($r=0.70$, $P=0.0001$) and a fair one with the mental component summary of the SF-36 Health Survey ($r=0.44$, $P=0.0001$).

Conclusions:

Persian version of the IKDC is a reliable and valid instrument for designing any assessment or rehabilitation program in Iranian patients post ACL and meniscus operations.

Keywords:

IKDC, Translation, reliability, construct validity, ACL and meniscus operation.



Timing of Anterior Cruciate Ligament Reconstruction and Incidence of Meniscal and Chondral Injury within the Knee

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Conflict of interest: None

Abstract

background: To review a single-surgeon series of 616 athletic patients with anterior cruciate ligament reconstructions in order to evaluate the relationship between the timing of the reconstruction and the incidence of meniscal and chondral injuries.

Methods: Six group patients were categorized based on the time interval from their injury to surgery in the following manner: less than 3 months, 3 to 6 months, 6 to 9 months, 9 to 18 months, 18 to 36 months and more than 36 months. The presence of meniscal tears was documented and chondral pathology was scored based on Outerbridge classification.

Results: Incidence of medial meniscus tear was significantly higher in patients undergoing reconstruction after three months from their injury ($P_v = 0.032$). The opportunity of patients with chondral pathology was recorded to be significantly higher in the groups operated on after six months from their injuries time ($P_v: 0,008$).

Conclusion: Considering the effect of time on the rate of having meniscus injury and chondral pathology, reducing the time between the injury and surgery could improve the long-term health outcomes in this population.



Decreased knee extension strength in ACL reconstruction: Quadriceps avoidance or hamstring over activity?

Context:

Following ACL injury and reconstruction surgery the knee extensors strength decreases. The present study was designed to investigate the reasons behind of this decrement. One of the possible strategies that ACLR subjects can use to prevent anterior tibial displacement during knee extension is co-activation of the hamstrings. It is generally believed that coactivation of hamstrings and quadriceps muscles are very important for knee joint stabilization and control of cruciate ligament loading.

Objective:

To examine the activation level of the knee extensor and flexor muscles after ACL reconstruction in athletes. Surface electromyography of the quadriceps and hamstring muscles was recorded during maximum voluntary isokinetic knee extension.

Patients or Other Participants: Twenty basketball and soccer players with at least 6 months after double bundle hamstring auto graft ACL reconstructions (ACLRs) and 20 age- and activity-matched subjects as controls were participate in this study (age = 26 ± 5.6 years, height = 176 ± 5.5 cm, mass = 78 ± 12.2 kg).

Main Outcome Measure(s): Concentric and eccentric isokinetic extensors and flexors peak torque of the knee were measured at 60 and 180 °/s. Simultaneously surface electromyographic activity of the vastus medialis, rectus femoris, vastus lateralis and lateral hamstrings(long head of biceps femoris) were recorded. The raw EMG of those repetitions with the highest peak torque was integrated.

Results: We found significant difference between the ACLR and control subjects for extensor peak torque at 60 and 180 °/s scores. On the single-leg hop for distance and vertical jump, the ACLR subjects significantly shorter distances with the involved limb than the uninvolved limb and control group. Decrease in quadriceps activity in relation to uninvolved and control group's leg was observed. Hamstring co-activation was less than that of control group.

Conclusions: ACL group showed decreased extensor moment caused by quadriceps inhibition and increased hamstring co-activation. We suggest to have more that more emphasis and focus on quadriceps strength and less emphasis on hamstring. Furthermore hamstring to quadriceps activity ratio(HQR) requires further studies to look for a new optimal value of HQR.

Keywords: Co-activation -ACL reconstruction- Isokinetic dynamometry-Surface electromyography

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Evaluation of kneeling ability after total knee replacement in patients with osteoarthritis of the knee

Mohsen Mardani Kivi, MD; **Mahmood Karimi Mobarakeh, MD; *Hossein Eftehad, MD; *Keyvan Hashemi Motlagh, MD; **Khashayar Saheb Ekhtiari, MD;*

Background:

The ability to kneel plays a crucial role in the daily events of nearly every individual's life, affecting occupational and domestic activities, which are, at times, closely intertwined with cultural and religious customs. The lack of literature addressing the patients concerns regarding the capacity, to which they will be able to function post-operatively, motivated us to investigate this issue further, so as to be able to more comfortably and precisely convey the answer to this question pre-operatively.

Material and Methods: In this cross-sectional longitudinal study, all patients were evaluated for eligibility, with prerequisites including those having had total knee arthroplasty (TKA) secondary to a pre-operative diagnosis of osteoarthritis of the knee, from the years 2007-2010 at Poursina Trauma Center, Rasht, Iran. All procedures using a midline skin incision followed by medial parapatellar arthrotomy without re-surfacing of the patella. A PCL substituting prosthesis was chosen for implant. Demographic Data, Knee Society Score (KSS), Functional Knee Score (FKS), Visual Analog Scale (VAS), and patient kneeling ability, were all extracted and recorded, pre-operatively, 1-year post-operative, and again during final follow-up. Statistical analysis was interpreted using SPSS software version 19.

Results: Of 114 cases, 69 were female (60.5%), 45 were male (39.5%), with a mean age of 67.9 ± 6.2 years (52 to 81) and mean follow-up range of 26.7 ± 2.4 months (14 to 44). VAS before surgery was 9.24 ± 0.7 , which was significantly higher than those taken at 1-year follow-up, 1.82 ± 1.04 , and at final follow-up, 2.01 ± 1.19 . KSS and FKS values were significantly higher at both 1-year and long-term follow-up than those taken before surgery ($p < 0.0001$). Before knee replacement 76 patients (66.7%) could not kneel, out of which 59 patients (77.6%) reported this inability because of reasons relating to the knee, while the remaining 17 patients (22.4%) reported their inability was due to non-knee associated factors. On long-term follow-up of the 59 patients whose inability to kneel was associated with issues relating to the knee, 42 patients (71.2%) found it possible to kneel again without pain or discomfort, or with mild discomfort only. It is clear after analyzing the data of patients who have received TKA, with regards to pre-surgical kneeling ability versus this ability months and years later, there is a statistically significant positive relationship between TKA and regaining the ability to kneel ($p < 0.0001$).

Conclusion: It seems that after total knee replacement in patients affected by osteoarthritis of the knee, the resultant decreased pain and increased function in knee flexion leads to strengthening of kneeling ability.



Keywords:

Total Knee Replacement, kneeling, Visual Analog Scale (VAS), Knee Society Score (KSS), Functional knee score (FKS)

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Introducing A New Method To Measure Tibial Translatory Movements Between The ACL-Deficient And Normal Knees (A Preliminary Study)

Rahimi A1, Wallace WA

Introduction:

Because of the complexity of the knee joint, the movements of the tibia relative to the femur is not a simple straight motion, which is mainly due to the existence of a semi-circular locus (and not a simple transcondylar line) providing an instant centre of rotation during knee movement. To date, there is no 3-D gait analysis system able to measure tibial translatory movements during a dynamic test such as walking or running. The current study aimed to find out a simple way to monitor tibial translation in normal and ACL-deficient knees.

Materials & Methods: In this very preliminary study, a Coda-mpx3 gait analysis system was used and the sagittal plane of the tibial movements relative to the femur was studied in 15 normal and 15 ACL-deficient subjects. Two virtual markers were defined at the lower end of the femur (VMF) and the upper end of the tibia (VMT) exactly at the middle of the lines connecting the real markers located at the femoral and tibial chondyles. The length of the line between these two points was assumed as the overall tibial translation and was measured during walking on level ground, walking on the treadmill and running on the treadmill at 10 Km/hr. (Figure1). This was compared between the ACL-deficient and normal control subjects to find out any increased tibial translatory movements in ACL-deficient knees. A T-test was used to investigate any significant difference between the subjects.

Results: The results showed that the ACL-deficient subjects had 40% more tibial displacement during walking on level ground when compared to the control subjects ($P=0.01$) (Table 1). However, during walking and running on level treadmill, the ACL-deficient subjects showed a total of 21% and 24% more tibial translation relative to the control group, which was not significant ($P=0.135$ & 0.065 , respectively).

Discussion and conclusion: This study revealed that although the tibial displacement was more in ACL-deficient knees in all levels, it was significant only during walking on level ground. Furthermore, the significant difference was shown only in the swing phases and not in stance phase referring a dynamic stable knee during the tasks. It can be calculated that lack of significant differences on such hard tasks on level treadmill clearly showed a physiologic stiff knee in

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ACL-deficient subjects.

Key Words: ACL-deficient knee, Tibial Translation, Coda mpx30, Knee Joint.

Table 1) The amount of tibial translation in the ACL-deficient knee and control groups during different level tests.

Test Levels	Gait cycle	ACLD Knee	Controls	P Value
Walking on level ground	Peak Stance	2 ± 8.2	0 ± 3.7	0.54
	Peak Swing	48.5 ± 12.4	35.6 ± 5.9	0.02
	Total A-P	50.1 ± 11.8	35.6 ± 7	0.010
Walking on the treadmill	Peak Stance	1.4 ± 6.8	-1 ± 4.3	0.41
	Peak Swing	45.6 ± 9.9	34.1 ± 8.3	0.030
	Total A-P	46.5 ± 8.9	38.4 ± 10.4	0.135
Running on the treadmill	Peak Stance	-4.7 ± 4.9	-4.4 ± 1.4	0.85
	Peak Swing	35.9 ± 9	27.3 ± 6.6	0.04
	Total A-P	39.7 ± 9.4	32.0 ± 6.6	0.065

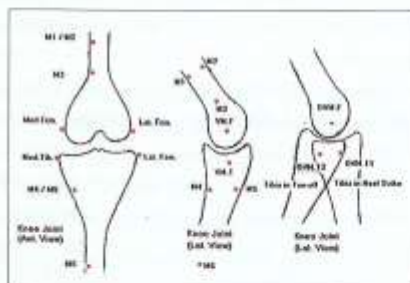


Figure 1) Schematic Positions of the Real and Virtual Markers



Radiographic Outcomes after Posterior Cruciate Ligament Reconstruction in Multi-ligament Knee Injuries

Jabalamehli m. (1), Hadi h.(2)

Abstract

Background: Despite using reconstructive surgery in multi-ligament knee injuries, there is little information about its long-term radiographic outcomes. So the aim of this study was to compare osteoarthritis of injured knee between pre-operation and last follow-up radiographs of patients.

Methods:

This retrospective cross-sectional study was conducted in 2011 on 26 patients with multi-ligament knee injury (including posterior cruciate ligament tear) who were undergone posterior cruciate reconstruction (with or without other ligaments repair or reconstruction) in Shafa Yahyaeen hospital in Tehran. The demographic data, trauma type, surgical technique and trauma-surgery interval were recorded from patients files. The severity of pre-operation and last follow-up degenerative joint disease (DJD) score [based on Kellgren and Lawrence (K/L) classification] and geometric properties of injured knee calculated by anteroposterior and Lateral knee radiographies. The patients' characteristics were compared according to the radiographic changes (no change or increase of DJD score).

Findings: Twenty-one patients (81%) were male and the mean age of patients was 29 year. The trauma type was high energy in 80% of patients and sport injury in others. The mean (SD) of tibial posterior slope and medial tibial plateau concavity were $12 \pm 4^\circ$ and 3.3 ± 1.2 mm, respectively. The surgical technique for posterior cruciate reconstruction was Inlay in half of patients and transtibial in others. Achilles tendon allograft was used in 73%, tibialis anterior in 11.5% and hamstring autograft in 15.5 % of patients. Seven (24%) patients had trauma-surgery interval of equal or less than 3 months and the mean follow-up duration of patients was 21 months. Based on hospital for special surgery knee ligament rating score 50 % of patients had satisfactory results. Seventy percent of patients had equal or less than one plus of posterior laxity on posterior drawer test. The mean of pre-operation and last follow-up DJD score were 0.46 and 1.32, respectively. The DJD severity had increased in 15 (58%) patients and had no change in remains. Patients with increased DJD severity had significantly higher mean follow-up duration, higher tibial posterior slope and lower medial tibial plateau concavity. However, there were no significant differences between two groups in terms of age, sex, type of trauma or surgical technique and trauma-surgery interval.

Conclusion: Findings of the present study showed that the severity of osteoarthritis increases



in long-term follow-up in more than half of patients who undergone reconstruction surgery of knee ligaments. Although length of follow-up is an important cause of increasing osteoarthritis severity, it seems that higher tibial posterior slope and lower medial tibial plateau concavity are others factors, too.

Key-words: Knee dislocation, Multi-ligament knee injuries, Posterior Cruciate Ligament, Knee osteoarthritis

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Title: Evaluation of the Impact of Platelet-Rich Plasma on Prevention of Tunnel Widening in Anterior Cruciate Ligament Reconstruction Using Quadrupled Autologous Hamstring Tendons.(Randomized Clinical Trial)

Dr Mikaeel Tafkiki Alamdari

Fardin Mirza tolou

Background:

Radiographic enlargement of bone tunnels following anterior cruciate ligament (ACL) reconstruction has been introduced in the literature and could be a potential source of technical problems in revision ACL surgeries. Platelet-rich plasma (PRP) consists of small volume of plasma enriched in platelets, which is obtained from the patient and plays important role in bone regeneration and ligament maturation.

Methods:We enrolled 40 patients in a prospective study that were submitted to an anatomic hamstring tendon reconstruction of the ACL. Patients were sequentially enrolled into two groups: group A without platelet-rich plasma (PRP) and group B with PRP in femoral and tibial tunnels at the end of surgery. All patients underwent CT scan imaging immediately and also 3 months after surgery to evaluate the size of femoral and tibial tunnels and their enlargements.

Result:There were more tunnel enlargement in group A but statistically it was not significant.

Conclusion: PRP has some effect on preventing tunnel enlargement in hamstring ACL reconstruction. The clinical significance of this enlargement on revision surgery remains unclear



The effect of lateral wedge insole with and without subtalar strap on vertical component of Ground reaction force in knee osteoarthritis

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Abstract

Background and purpose: The effect of lateral wedge insoles with and without subtalar strap on vertical component of ground reaction force was compared.

Methods: Twenty five patients aged over 40 years with grades I or II medial compartment knee osteoarthritis based on Kellgren and Lawrence grading system were participated in this study. The participants were required to walk along a 3-meter walkway and were tested in 3 conditions including: bare foot, wearing lateral wedge insole with and without subtalar strap. Three successful trials were recorded in each condition. Gait analysis was performed using two Kistler 9286BA force plates to compare the immediate effect of lateral wedge insole with and without subtalar strap on vertical component of ground reaction force.

Results:

The effect of lateral wedge insole with subtalar strap was significant on the second peak vertical ground reaction force related to lateral wedge insole and without insole conditions. However, the effect of lateral wedge insole with and without subtalar strap was not significant on the first peak vertical ground reaction force and on walking speed.

Conclusion: The results of this study suggest that lateral wedge insole can reduce second peak vertical ground reaction force. In addition, lateral wedge insole with subtalar strap may be more efficacy than lateral wedge insole in mild knee osteoarthritis patients.

Key words: Knee, Osteoarthritis, Insole, subtalar strap

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***POSTER Presentations
of 2nd ISKAST Congress***



Avulsions of Triceps brachii: associated injuries and surgical treatment; a case series **Kaveh gharanizadeh MD**

Abstract

Introduction:

Triceps avulsions are reported to be among the least common tendon avulsions and associated injuries are not well understood.

Method:

Three patients with isolated triceps avulsion and three other triceps avulsion with associated injuries(one radial head fracture, one distal humerus articular fracture and one with MCL tear) underwent surgery . The mean follow up period was 21 month (6month to 4 years). The mean Mayo elbow performance score (MEPS) WAS 91. All patients came back to their previous work and all gained their previous level of activity except one with associated capitulo- trochlear fracture.

Conclusion:

Surgical management of triceps avulsions results in very good outcome. Associated injuries should be addressed carefully because they play effective role in the end results especially in case of the articular fracture

Key words: Triceps avulsion, MCL ,Tear ,surgical treatment



Title: Antero-medial portal vs transtibial techniques for drilling femoral tunnel in ACL reconstruction using 4-strand hamstring tendon; a cross-sectional study with a one year follow-up

Mohsen Mardani Kivi, MD; **Sohrab Keyhani, MD; *Mahmoud Karimi Mobarakeh, MD; ****Keyvan Hashemi Motlagh, MD; *****Khashoyar Saheb Ekhtiari*

Abstract:

Introduction: Antero-Medial Portal (AMP) and Trans Tibial (TT) techniques are the most widely used methods for drilling femoral tunnel in Anterior Cruciate Ligament (ACL) reconstructions; yet, debate continues about the preferred method. This study seeks to compare these two techniques in patients with ACL tears.

Methods and Materials: In this comparative cross-sectional study, all cases of isolated ACL reconstruction using 4-strand hamstring tendon in 2006-2010 were evaluated for attaining qualifications of the research. Of 266 patients, 124 cases (60 TT and 64 AMP) with the mean age of 28.48±8.3 met the inclusion criteria. Both groups were compared in 8 follow-ups from the point of view of time of: a) return to post surgical activities (including: walking without crutches, life's normal activity, jogging, and exercising), b) maximum range of passive movements, c) knee instability (Lachman test), d) functional condition (Subjective IKDC and Lysholm knee scores), e) therapeutic outcomes, and f) patient's satisfaction of treatment (VAS).

Results: AMP technique significantly accelerates patients' return to activity. AMP patients achieved full range of motion (extension and flexion) much sooner than TT cases ($P<0.0001$). after one year follow-up, S-IKDC scores were 94.8±3.9 and 89.2±4.1 and S-LKS scores were 96.1±3 and 92.2±4.1 for AMP and TT groups respectively ($P<0.0001$). Knee stability after ACL reconstruction was similar in both group regarding to lachman test ($P=0.25$). AMP-group patients (VAS mean score: 9.78±0.4) had greater satisfaction of the treatment compared to TT-group patients (VAS mean score: 9.53±0.5) ($P=0.003$).

Conclusion: Using AMP technique, in addition to better therapeutic outcomes and greater satisfaction rates, leads to reduction in time of return to routine activities.

Keywords: Anterior Cruciate Ligament reconstruction, femoral tunnel, Antero-Medial Portal, Trans Tibial portal



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Title: Antero-medial portal vs transtibial techniques for drilling femoral tunnel in ACL reconstruction using 4-strand hamstring tendon; a cross-sectional study with a one year follow-up

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AMP technique significantly accelerates patients' return to activity. AMP patients achieved full range of motion (extension and flexion) much sooner than TT cases ($P < 0.0001$). after one year follow-up, S-IKDC scores were 94.8 ± 3.9 and 89.2 ± 4.1 and S-LKS scores were 96.1 ± 3 and 92.2 ± 4.1 for AMP and TT groups respectively ($P < 0.0001$). Knee stability after ACL reconstruction was similar in both group regarding to lachman test ($P = 0.25$). AMP-group patients (VAS mean score: 9.78 ± 0.4) had greater satisfaction of the treatment compared to TT-group patients (VAS mean score: 9.53 ± 0.5) ($P = 0.003$).

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Keywords: Anterior Cruciate Ligament reconstruction, femoral tunnel, Antero-Medial Portal, Trans Tibial portal

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Fixation of tibial avulsion fractures of the posterior cruciate ligament using pull through sutures and malleolar screw.

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Mashhad Medical University

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Abstract

Background: Tibial avulsion fractures of the posterior cruciate ligament are not infrequent. However ,controversies exist between the fixation of the fragments and their reconstruction in the cases with small bony fragments. This prospective study was undertaken to study the results after fixation of the fragments by the malleolar and the pull through suture techniques. **Methods:** From June 2003 to March 2008 , 106 patients with acute isolated posterior cruciate ligament avulsion fracture of the tibial attachment were treated surgically at Qhaem and Emam Reza hospitals in Mashhad University of Medical Sciences. The screw fixation was used in 78 cases with large bony fragments and suturing method for other cases who had small or comminuted fragments. The patients were followed for an average of 24 months; and according to the International Knee Documentation Committee the results were evaluated.

Results: All our patients were men and all the avulsion fractures achieved union at an average of 4.8 months (range,3-8 months).All the patients had severe posterior instability (10mm) pre-operatively. However , when the union of the fracture was achieved ,no one suffered severe instability.

Conclusion: Both of these two techniques(especially screw fixation) had satisfactory results. Although the number of our cases was not high enough , it can be claimed that when the bony fragment is small and the screw fixation increases the risk of fragment breakage , the double bundles pull-through suture technique is an effective alternative choice.

Key words: Posterior cruciate ligament, fracture, knee

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Title: comparison of treatment outcomes of arthroscopic Bankart lesion repair with open Bristow - Latarjet technique in patients with anterior shoulder instability

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Abstract:

Background: over 150 different surgical techniques for treatment of anterior shoulder instability has been suggested that there is no consensus in the orthopedics. This study seeks to compare treatment outcomes of arthroscopic Bankart lesion repair methods with Bristow - Latarjet open surgical technique in patients with anterior shoulder instability.

Methods and Materials: In this cross-sectional study all patients with recurrent shoulder dislocation from 2009-2011 was divided into two groups, arthroscopic Bankart treatment (28 cases) and open Bristow - Latarjet (26 cases) that all were treated by one orthopedic surgeon. Patients were visited in 2,4,6,8 weeks also in the third and sixth month post-op. The visual analog scale (VAS) for patient satisfaction and Walsch-duplay and Rowe score for functional outcomes of treatment were used in six months follow up. These three criteria were analyzed again after recalling the patients.

Results:

Mean age of 54 patients was 29.46 ± 9.16 years and mean follow-up duration was 23.28 ± 6.2 months. Scores of patients in both groups were not statistically different after analyzing the functional outcomes of treatment by Walsch-duplay and Rowe score after six months and final follow-up. Scores of patients by Walsch-duplay measurement in arthroscopic Bankart and Bristow - Latarjet groups were 98.03 ± 4.37 and 97.88 ± 4.51 respectively and by Rowe index were 97.32 ± 5.52 vs. 97.88 ± 4.51 at final follow-up. No recurrence was observed in both groups in final follow up. Patient satisfaction in Bankart and operation groups were 9.4 ± 0.68 and 9.47 ± 0.58 ($p = 0.69$).

Conclusion: Arthroscopic Bankart procedure in treatment of recurrent shoulder dislocation not only in stabilizing and reducing recurrence rate, but also in restoring range of motion and increasing satisfaction level of patients is equal to open surgery.

Keywords: Glenohumeral joint, anterior shoulder instability, Bristow - Latarjet technique, Arthroscopic Bankart repair.

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Posterior first concept in soft tissue balancing during primary total knee arthroplasty Ataollah Moshirabadi , MD. Consultant Orthopedic surgeon in Hip & Knee surgery

NIOC Hospital, Tehran

Background:

Performing total knee replacement needs both bony & soft tissue consideration. Late John Insall advocating spacer blocks with concept of balanced & equal flexion – extension Gap. Although we usually excise both ACL & PCL, still it is possible to retain more soft tissue. Both PCL retaining & sacrificing Require intact collaterals for stability. Superficial MCL & LCL should be preserved, if possible.

After PCL removal the following advantages could obtain: More correction of fixed varus or valgus deformity, more surgical exposure. but there are no proved disadvantages like ; increasing in stress & loosening of bone-cement-prosthesis interface , specific clinical difference in ROM , forward lean during stepping up , proprioception inferiority . In other hand over tight PCL cause excessive rollback of tibia & knee hinges open, preventing flexion (booking), and Severe posteromedial polyethylene wear in poor balance PCL might be happened.

Mid range laxity when Post. Capsule is tight, even with correct tensioning in full extension & 90 degree flexion , may occur (and secondary collateral ligaments imbalance throughout ROM) . There is a major effect of capsular contracture in coronal mal alignment with flexion contracture. Full MCL releases not only correct fixed varus but also open the medial space in flexion. MCL & post. Capsule has combined valgus resistant effect in extension. PCL release increase flexion gap more, May be necessary to release something that affect extension gap as compensated balancing (Post.medial capsule) .Any flexion contracture need to posterior capsulotomy & post. Condyle osteophyte removal before femoral recut.

So it is possible to perform posteromedial capsulotomy prior to superficial MCL release.

Method:

From May 2009 to Dec. 2012 , 109 patients (127 knees) (bilateral in 18 patients , simultaneous bilateral in 4 patients) with primary DJD and varus deformity of knees were operated by myself with joint replacement . Most patients had some degree of varus correction in flexion, passively. The varus angle was less than 25°, means mild to severe but not decompensate. 46 patients had some degree of patella baja . For soft tissue balancing during Total knee arthroplasty I consider the following steps;

Medial capsule & deep MCL release, PCL release, Posteromedial capsulotomy , semimembranous release , Superficial MCL release , Pes anserinus release . Post.medial capsulotomy was



done in all cases.

The Average Age was 65.47 years, 88 patients (106 knees) were female (80.7%) and four of them had bilateral TKA simultaneously. Lt Knee was operated in 56 cases (44% of 127). Spinal anesthesia was applied in 66.9% (85 patients). 14 knees were operated with MIS technique and 113 knees with Standard medial parapatellar incision. Semi membranous release was necessary in 48 cases (19 pure=14.9%, without S.MCL release) . S.MCL release was mandatory in 29 (22.8 %) cases .for checking balanced medial and lateral subtle laxity (playing), I have used simple blade with 1 & 2 mm thickness in each ends for younger patients , and the other one with 3&4 mm thickness in elder cases .

Results:

Average follow up period is 421 days. Average Operating time was 1 : 38 (h:m) . Average Transfusion = 1.29 unit packed cell . No Flexibility in 30° flexion was seen in 3 patients.

Average varus malalignment =14.76° (2-25°) / Av. Valgus angle = 7.11° (5-10°) / Av. DLFA = 91.15° (85-102°) / Av. PMTA = 82.04° (68.5-90°) / Av. Ext. rotation cut = 4.64° (0-7)

Stage I + PCL + Post.Med. Capsular release was performed in all . pure stage I + P.M.capsular release in 79 cases(62.2%), plus semimembranous release in 19 cases(14.9%) , S.MCL release in 29 cases(22.8%)/ Av. Post op alignment: 1.01° varus (0-6°) (worse in medial pivot knee) . so S.MCL release was prevented in 77% of cases .

Av. Polyethylene size : 12.22 (9 in oxynium -19 in plus) / Semi membranous release was necessary in 48(37%) cases (preop varus 17.57°) . / S.MCL release was mandatory in 29(22%) cases (preop varus 17.6° & No Flexibility in 30° flexion) .

pre operation knee society score : stage I = 26.6 , stage II = 38.7 increase to stage I = 86.45 , stage II = 77.63

Conclusion:

In society with more kneeling habitués , during performing total knee arthroplasty with less than 25° degree varus malalignment plus some degree flexibility of the deformity in flexion , it is wise to consider posteromedial capsular release prior to semi membranous & S.MCL release to obtain full correction of alignment. But the most important things is reaching to more align limb without instability, regardless of various technique.



Autologous Platelet Rich Plasma for treatment of Degenerative Arthropathy in Knee

Raji Mina¹, Raji Mitra², Pirani Shahryar², Tabatabaei S Mahoor²

Introduction:

Platelet Rich Plasma (PRP) has been utilized in surgery for 2 decades. PRP contains growth factors and bioactive protein that influence the healing of osteoarthritis. The main hypothesis of this research based on biotherapy of osteoarthritis with PRP in treatment of aging joints, as a alternative therapeutic methods for treating disorders of the musculoskeletal system and tissue regeneration. This method can take advantage of natural defense and healing potential of the human body. The objective of this paper presents a new method for treatment of such lesion to help the routine orthopedic surgery.

Material & Methods: Study group contains 200 patients (128F / 72M) between 40-75 years old. All patients were initially given a standardized physical therapy protocol and a variety of other nonoperative treatment. These patients had failed nonoperative treatment. They were given a single intraarticular injection of PRP in knees. Patients were evaluated clinically before treatment and at 6, 12 months later respectively. Clinical evaluation contained different methods such as IKDC, objective and subjective and EQVAS. Statistical analysis was performed to evaluate the significance of sex, age, grade of OA and BMI.

Results: Six months after the treatment, the PRP patients noted 70% improvement in their visual analog pain scores ($P < 0.0001$). 12 months later reported 92% reduction in pain compared with before the treatment ($P < 0.0001$).

Conclusion:

The preliminary results indicate the treatment with PRP injection is safe improve knee function and quality of live in younger patients with low degree of articular degeneration. Finally, PRP should be considered before surgical intervention.

Key words: PRP, Cartilage, Knee, Intra-articular injection.

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Assessment of variations in knee laxity of the menstrual cycle in women athletes referred to the clinic of Imam Khomeini hospital of sari 2010.

*Esmael shafiei. MD**

Abstract:

Introduction: knee ligament injury is one of the most common sports injuries and imposes high socio-economic burden to patients and society. Anterior cruciate ligament (ACL) rupture is the biggest concern for orthopedic surgeons who are involved in sports injuries, so that the maximum ACL reconstruction surgery is related to the sport.

Especially, this is important in female athletes because statistics show that the ACL injuries in female athletes are 2-8 times more common than male athletes in sports injuries.

Several factors are responsible for this gender difference. One of that is increased ligament laxity in female than male. The aim of the study was assessment of Changes in knee laxity of the menstrual cycle in women athletes referred to the orthopedic clinic of Imam Khomeini hospital of sari 2010.

Methods:

This descriptive study was holding on 40 women athletes referred to the orthopedic clinic of Imam Khomeini hospital of sari 2010. Knee ligament laxity evaluated by one knee surgeon in period time, ovulation time and mid of luteal phase. Also hormone levels such as estrogen and progesterone were assessed by one laboratory in 3 mentioned times.

The time of ovulation can be specified based on urinary LH kits. We used Lachman test and anterior drawer test for Knee laxity rate.

The questionnaire collected data, descriptive statistics were calculated as indices of central distribution of bonds ($x \pm sd$) and relative frequency distribution is used for qualitative variables.

Data analyzed with SPSS version 18 and we could evaluate changes in knee laxity in menstrual cycle in our patients.

Results: in this study after analyzing the data we result that there is no significant difference in ACL laxity in female athletes between 3 phase of menstrual cycle such as period time, ovulation time and mid of luteal phase

Conclusion: Today, despite numerous studies and researches in the field of knee laxity and the effect of female hormones, many researchers do not agree about the effect of female hormones on knee laxity but this study reported no relationship between female hormones and knee laxity, while a fundamental difference between male and female athletes was so clear in some studies.

Keywords: knee joint laxity, menstrual cycle, female athletes

*orthopaedic surgeon



The role of synovectomy in patients with rheumatoid arthritis (Mashhad Medical University Experience)(Code 200)

*By: Dr.Amir Shahriar Ariamanesh
Assistant Professor of Mashhad Medical University
Overseas Fellow of British Orthopedic Association
Mashhad-Iran*

Back Ground:

The basic indication for synovectomy in rheumatoid arthritis is failure of the disease to respond to appropriate medical treatment after six months. The palliative benefits often makes the procedure worthwhile.

Methods: 46 patients with established diagnosis of RA which have failed to respond to medical treatment were scheduled for arthroscopic synovectomy in two university hospitals of Mashhad. The knee scores and radiographic data were recorded preoperatively. All the patients were followed for at least 32 months after operation.

Results: Six months after synovectomy. 91% of patients have good results; 86% continued to have good results at two years, but at last follow up (about 3 years) this decreased to 49%. Progressive radiographic changes were noted in 25.6% of patients at 2 years and in 43% at last follow up.

Conclusion:

Although temporary symptomatic relief was highly successful, progression of the disease was rarely affected. So the arthroscopic synovectomy cannot be advised to be done prophylactically to change the natural progression of the disease.

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The compare effect of static stretching, ultrasound & stretching, the combination of ultrasound & stretching and apply brief tens on extension range of motion Knee in students 18 to 30 years

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Shiraz University of Medical Science

Introduction:

Muscle contracture can cause problems muscular – skeletal systems in long term finally be pain . The best way to prevent these problems is to maintain muscle flexibility through stretching is succeed for the better part of stretching exercises can be used in different exercises. The aim of study is compare these three methods of static stretching alone , the combination of ultrasound & stretching and apply brief tens (frequency : 150-250 HZ , duration : 250us, intensity : high, time:15min) then combination of ultrasound & stretching to be the most effective method of selective between these three methods be specified .

Materials and Methods: This study has been done by simple sampling of 30 people between the ages of 18 to 30 healthy male students of Shiraz rehabilitation school. The study cases have hamstring muscles shortening and SLR less than 80 degrees. The study cases were randomly categorized into 3 groups and one of methods treatment apply for them. Hamstring muscle flexibility before and after the curing was measured as active and passive. Data analysis and was evaluated by Mann – Whitney U test .

Results: Data analysis revealed that all three treatment methods can causes improve muscle flexibility to be active and passive. In comparison both groups, 1-stretching alone, 2-combination ultrasound & stretching and both groups, 1-stretching alone, 3-apply brief tens and combination ultrasound & stretching, revealed a significant difference in active and forms. This means to apply stretching combine with ultrasound and ultrasound with tens in improvement muscle flexibility was more effective that stretching alone group. In comparison apply brief tens and stretching with ultrasound group and then stretching and ultrasound combine stretching although significantly difference between the two group did not observation but P value obtained by comparing the flexibility active between two group to 0/05 very adjacent also seems to be apply tens before stretching combine ultrasound on range of activity joints by improving muscle flexibility improvement. It was thought to prove the entire issue requires investigation will be more.

Conclusion : Static stretch cause improve muscle flexibility but stretch combine with ultrasound and apply Tens before stretch to be improve muscle flexibility significantly.

Key words: Muscular-skeletal, flexibility, hamstring muscle, static stretch, ultrasound, brief tens



تاثیر WHOLE-BODY VIBRATION (لرزش کل بدن) بر تسریع درمان توانبخشی (فیزیوتراپی) بازسازی ACL

عارف سعیدی

کارشناس ارشد فیزیولوژی ورزشی

مقدمه و هدف:

وپیریشن کل بدن نوع جدیدی از تمرینات با تکنولوژی جدید می باشد که بطور فزاینده ای در جوامع مختلف استفاده از آن بعلاوه و استفاده در فضاهای مختلف از جمله منازل و کلبه های بازتوانی و سالن های ورزشی رو به گسترش می باشد همینطور اینگونه تمرینات تاثیرات بسیار زیاد و متنوعی بر روی سیستم های مختلف بدن ایجاد مینماید از جمله این تاثیرات که در مطالعات و تحقیقات گذشته بر روی آنها صورت گرفته به اختصار عبارت اند از: تعادل و قدرت و استقامت و تاثیر بر سیستم های ترشحی غدد درون ریز از جمله تستوسترون و کورتیزول و هورمون رشد و... لذا در این مطالعه تاثیر ترکیب تمرین مقاومتی و وپیریشن کل بدن با جابجایی عرضی بر قدرت عضلات همسترینگ و کوادریسیس و انعطاف پذیری کمپارتمنت های انقباضی و غیر انقباضی در کمپلکس زانو در مردان جوان ورزشکار (فوتبالیست) مورد تحقیق قرار گرفتند.

هدف از انجام این تحقیق یافتن روشی ساده و در عین حال مفید جهت ادامه توانبخشی و فیزیوتراپی و انجام ورزش در فضاهای خانگی با هدف تکمیل و تسریع برنامه های توانبخشی و در فضاهای کلینیکال و باشگاهی با هدف برگشت سریع تر و کاملتر به ورزش قهرمانی جهت بدست آوردن سطح آمادگی حرفه ای می باشد.

روش کار:

مطالعه از نوع تیمه تجربی بود. در این مطالعه ۳۰ مرد جوان ورزشکار فوتبالیست که بازسازی ACL انجام داده بودند شرکت کردند. آزمودنیها بطور تصادفی در سه گروه تمرین وپیریشن و گروه تمرین مقاومتی و گروه تمرین ترکیبی وپیریشن و تمرین مقاومتی قرار گرفتند و به مدت ۳ ماه هر روز طبق پروتکل به انجام تمرین پرداختند.

یافته ها: نتایج بدست آمده نشان داد که تاثیر ترکیب تمرین وپیریشن کل بدن و تمرین مقاومتی در طی ۳ ماه و بصورت هر روز و با فرکانس ۵۰ هرتز و جابجایی از نوع (عرضی به میزان ۱ میلیمتر که برای اولین بار در دنیا انجام شد) سبب افزایش بیشتر و معنی دارتری نسبت به دو گروه دیگر در افزایش قدرت کوادریسیس و همسترینگ و نیز افزایش بیشتر و معنی دارتری در انعطاف پذیری بافت های انقباضی و غیر انقباضی کمپلکس زانو گردیدند در نهایت دامنه کامل مفصلی زودتر و کاملتر برگشت.

نتیجه نهایی این تحقیق نشان داد که استفاده از ترکیب تمرین وپیریشن کل بدن (WBV) و تمرین مقاومتی با توجه به افزایش معنی دار تر قدرت همسترینگ و قدرت کوادریسیس و نسبت قدرت همسترینگ به کوادریسیس و افزایش معنی دارتر میزان انعطاف پذیری بافت های انقباضی و غیر انقباضی کمپلکس زانو نشان دهنده موثرتر بودن اینگونه تمرینات ترکیبی بوده و می تواند برای متخصصین جراحی بازسازی رباط صلیبی قدامی جهت تجویز به مراکز بازتوانی و بیمارستانها تمرینی مناسب و مفید بوده و زودتر به حالت طبیعی و نرمال خویش بازگردند.

کلیدواژه ها: تمرین وپیریشن کل بدن WBV/تمرین مقاومتی ترکیب تمرین وپیریشن کل بدن WBV و تمرین مقاومتی /

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