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Although primary osteoarthritis is rare below age of 30 yrs, secondary arthritis due to previous sports injury is not so uncommon. Damage to the hyaline articular cartilage in the knee may lead to the accelerated onset of osteoarthritis. The articular cartilage lesions affect millions of people worldwide, but treatment is hampered by the fact that in adult life hyaline articular cartilage is limited in its ability to regenerate. That is where cartilage transplant known as ACI – Autologous Chondrocyte Implantation holds a huge promise.



Treating the knee pain in the young- Biological Cell therapy: The New Frontier

What is cartilage?

Cartilage is the matrix combining cells & gel, which is tough as well as elastic. It helps prevent the grinding of two bony surfaces and thereby helps the movement of joints efficiently. It depends on hyaluronic acid from the synovial fluid for nourishment and lubrication.

Why is cartilage damage a huge challenge?

However if there is an injury due to sudden impact or obesity or due to overuse of joints, there is erosion of the cartilage, exposing the bony surface. Cartilage does not have blood supply & nerve fibers and does not have capacity to repair & re-grow itself.

What is the answer?

Early detection & quick treatment can limit further damage to the joints. While there have been many different approaches to grow cartilage, ACI technique appears the most promising, due to its ability to generate hyaline type cartilage which is more durable.

Who can benefit from ACI?

ACI is generally most useful in treating focal cartilage defects, which are less than 2 cms in diameter. Most commonly such defects result due to sports injury, and sudden impact trauma with significant pain which limits his or her routine activities, and otherwise has a stable joint, with no damage to ligaments & muscles.

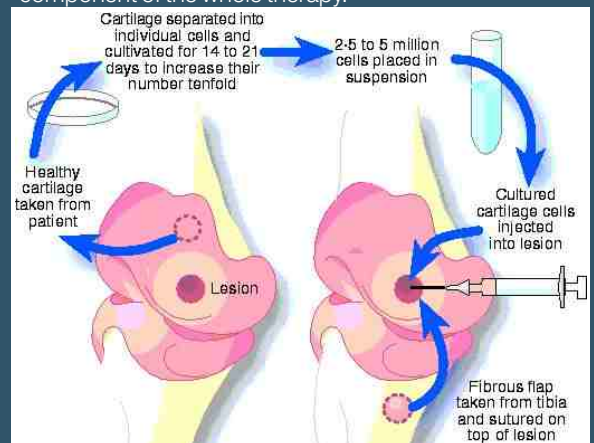
MACI – Matrix Induced Autologous Chondrocyte Implantation uses collagen membrane and Tisseel fibrin sealant to attach the chondrocyte seeded scaffold and fill the cartilaginous defect void. It offers an effective treatment by isolating and growing the patient's own



cartilage building blocks, known as chondrocytes, and re-implanting these cells into the damaged area within the knee joint via surgery using a specialised collagen membrane.

How is MACI performed?

The procedure is performed in two stages. Firstly as a day patient, a sample of cartilage cells is removed arthroscopically from the non-weight bearing part of the knee. The chondrocyte cells are then isolated and grown in a special laboratory using highly developed tissue engineering procedures that take approximately four weeks. The second stage involves implanting the chondrocyte cells that have been seeded onto the collagen membrane into the defect in the knee via specialised knee surgery. A postoperative hospital stay of approximately 2–4 days will generally be required following surgery. The patient is then discharged wearing a protective knee brace and using two crutches. The post-ACI rehabilitation programme is very critical component of the whole therapy.



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Era of Joint Replacement & Current Advances

The age-related degenerative arthritis is the world's leading cause of disability. Arthritis is the condition where cartilage at the joint surface of bone wears away leading to painful condition. As the population of the world grows older and medical advances lengthen average life expectancy, osteoarthritis will become larger public health problem.

Joint Replacement – The Most Successful Surgery of Millennium

When the whole joint is badly affected then the only solution to relieve pain and get back to normal routine is 'total joint replacement surgery'. For successful long-term results it is important to have accurate and precise alignment of limb, sizing of implant and accurate and precise balancing of ligaments. The 15-year survivorship of this procedure is 90 to 95%.

Function After Knee Replacement – Complete Knee Bending

Knee replacement done by conventional knee implant provides 90 to 100 degrees of knee bending. However, this is not enough with our cultural and traditional background, as most of the patients need complete knee bending in their day-to-day life for all routine activities. There is a breakthrough technology using RPK- Rotating Platform Knee with computer navigation. Now patients can get complete knee bending and can kneel and sit cross-legged after surgery. This has not only brought new dimension to the patient comfort level after knee replacement but also has encouraged many patients to undergo knee replacement and enjoy priceless quality of life.

What Other Types of Joint Replacement Surgeries Can Be Performed?

Apart from knee replacement, unicompartmental knee

replacement, hip replacement, hip resurfacing and revision joint replacement are being routinely done.

Revision joint replacement surgery means redoing of a failed joint replacement due to mal-alignment of components or implants, ligament instability, infection or wear-out of joint surface. Depending upon the etiology there is always bone loss and ligament instability. There are special types of joint used to compensate these surgical challenges. Again, computer-assisted surgery has a very precise and accurate role in long-term success of revision joint replacement.

Success of Joint Replacement

Undoubtedly, this is an unique surgery and its results are gratifying. This not only reduces pain but also improves quality of life. Various important factors are accountable for its success like experienced surgeon, proper set with infection-free laminar-flow operation theatre, excellent instruments, implants & equipments, good team of anaesthetist not only for anesthesia but also for post-operative pain management, trained team of physiotherapist and hospital institution having multi-disciplinary backup support. But one should not forget the key factor in this is the patient, who after proper understanding of problem and surgical procedure co-operates with strong will power.

There are many benefits with CAS

- Accurate implant alignment
- Precise ligament balancing
- Both sides knee replacement can be done simultaneously
- Minimally invasive surgery, which reduces pain and blood loss
- Faster recovery and rehabilitation
- Significantly better outcome

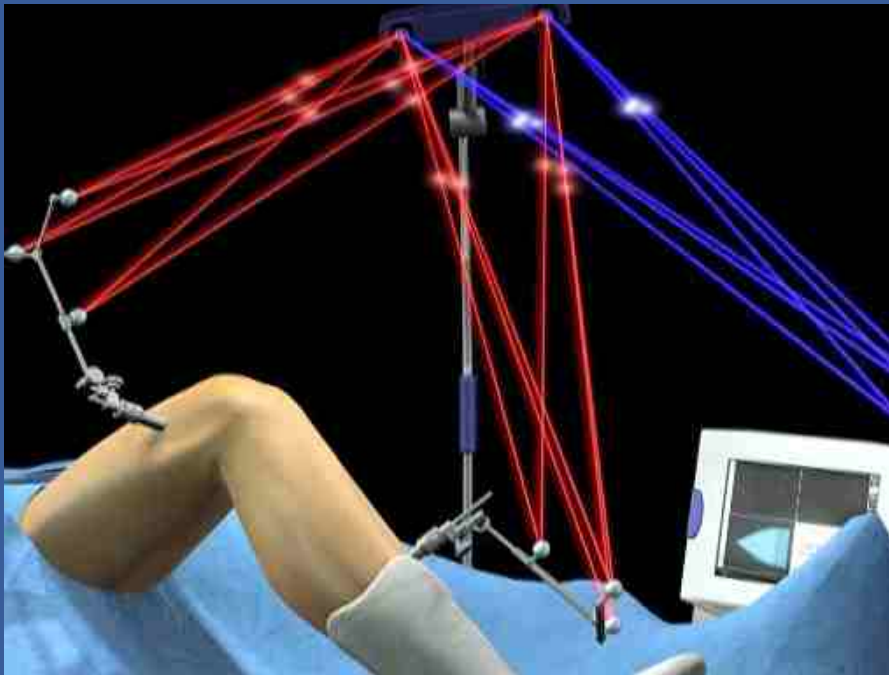


Bilateral Knee Replacement using computer navigation



Computer Assisted Joint Replacement – A Novel Technique

The longevity and ultimately the success of knee and hip replacement surgery depend on the surgeon's ability to place the implants accurately and to restore soft tissue balance. Traditionally this is achieved by the skill of the surgeon, who translates the information contained in the pre-operative plan into practice during surgery. The current technology using computer navigation in joint replacement has changed this scenario.



CAS (Computer Assisted Surgery) is a computer's capability combined with a surgeon's judgment to perform a task better than either machine or human alone. A similarity can be drawn between CAS to assist with surgery and GPS (Global Positioning System) to assist with route planning. Both provide a means for getting to the next stage, i.e. analytical and process-based assistance to provide information that allows better decision-making.



Platelet-rich Plasma

Cutting-edge, emerging new therapy
as new option for ailing athletes

A number of orthopaedic and sports conditions remain a major therapeutic challenge to Orthopaedic surgeons even this day and age of technological advance. Some of these difficult conditions include plantar fasciitis (chronic pain in the sole of the foot), tennis elbow (chronic pain in the elbow), ligament and muscle injuries (around the knee and other joints) and tendo-achilles (heel) injuries. Persistent symptoms, due to these conditions, in young individuals have led to premature ending of their competitive careers. Sports medicine experts all over the world, for a very long time, have been looking at the various options available to treat these conditions effectively. In this direction, Platelet-rich Plasma (PRP) therapy is taking the sports medicine world by storm, as is seen in recent years. PRP is now being effectively used to mend ligaments and repair tendon injuries; thanks to the recent technological surge.

Platelets

Platelets are small disk or plate-like structures normally found in blood. They are tiny cells, yet powerful, that are partially responsible for blood clotting (stops bleeding), and are critical in healing process. They promote rapid healing by secreting healing and growth factors and thereby enhance recovery.

Platelet-rich Plasma

Platelet-rich plasma is the name given to plasma (normal component of blood) with a high concentration of platelets. When blood, taken from the patient is placed into a tube and spun in a centrifuge (a device that spins), it separates the blood into several different components, one of which is called as platelet-rich plasma. Each cubic millimeter of this plasma solution can contain 1.5 to 2 million platelets. These concentrated platelets contain huge doses of very important bioactive proteins, that are necessary for the repair and regeneration of tissues. These special proteins can also initiate new blood vessel formation, bone regeneration and healing, connective tissue repair and endorse overall wound healing.

Safety of PRP

The chances of an adverse reaction is completely

nullified because the components used for treatment are derived from a person's own body. This makes the procedure entirely safe. Thus there is NO RISK of transmission of disease.

A Word of Caution

PRP therapy is not a quick fix. Regeneration of injured tendons and ligaments will take time. Physical therapy may be continued for a week after the procedure. A patient who has undergone PRP therapy may initially suffer some soreness or discomfort, especially at the injection site. Local icepacks and analgesics will help to resolve these symptoms.

The Future

Although PRP therapy is gaining popularity in sports medicine, it's use is fast spreading into other fields including dentistry, heart surgery and wound healing. It is exciting to learn that researchers are looking into its role in regenerating bone or helping arthritis. As both research and experience move forward, doctors see a wide range of clientele and applications on the horizon for PRP. A new international society, dedicated to research into the use of biological therapies in Orthopaedics, was formed in the USA recently, of which the author is a founder member.

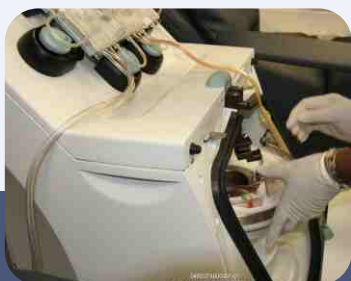


Vijay D Shetty
Consultant Orthopaedic Surgeon,
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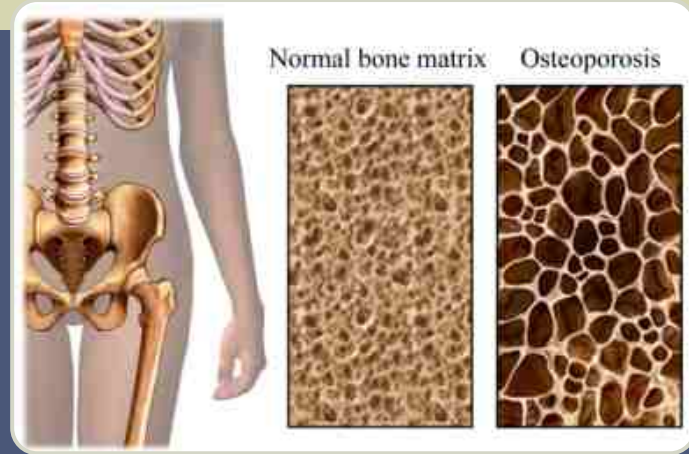
Benefits

Early results with PRP treatment are very encouraging. Research indicates that the procedure will gain prominence as the first choice of treatment, for many of the conditions listed above, for reasons both medical and financial. Some of the highlights of PRP are the following:

- Non-operative treatment
- Based on body's own healing potential
- Can be considered when all doors are shut
- Cheap compared to any other surgical procedures
- Entire procedure (admission, injection, recovery and discharge) lasts for not more than four hours
- It may reduce or even completely eliminate the need for complicated treatments like, aggressive medications or surgery



Osteoporosis



What are the risk factors?

Osteoporosis is about four times more common in women than in men. The following general risk factors may trigger Osteoporosis:

- A family history of Osteoporosis
- Low calcium diet
- Lack of physical exercise or sedentary lifestyle
- Being underweight
- Alcohol consumption
- Smoking
- Bone cancer
- Medicines such as corticosteroids, anticoagulants (blood-thinners), anti-thyroid agents, diuretics, medications for blood pressure, etc.
- Early menopause
- Women whose ovaries are surgically removed

What is Osteoporosis?

Osteoporosis means porous bone, which develops when bone is no longer replaced as quickly as it is removed. Bones become weak and fragile, until even a slight impact may cause them to break.

What are the symptoms of Osteoporosis?

Osteoporosis is often called the 'silent disease' because bone loss occurs without symptoms. People may not know that they have osteoporosis until their bones become so weak that a sudden strain, bump or a fall causes a hip fracture or a vertebral collapse. Collapse vertebra may initially be felt or seen in the form of severe back pain. Loss of height or spinal deformities such as kyphosis or severely stooped posture can be seen later.

What causes Osteoporosis?

The exact medical cause for Osteoporosis is not known, but a number of factors are known to cause Osteoporosis -aging, physical inactivity, reduced levels of estrogen, heredity, excessive cortisone or thyroid hormone, smoking, excessive alcohol intake etc.

Treatment for Osteoporosis:

Early treatment for Osteoporosis is the most effective way to reduce bone loss and prevent fractures.

Current treatment can reduce bone loss, but there are no proven methods of restoring lost bone. Building bones through adequate calcium intake and exercise when you are young is an investment that will pay off years later with a reduced risk of hip and other fractures. Apart from calcium, vitamins (D, K, B6, and B12) and minerals like magnesium, zinc, manganese and silicon are also important in strengthening bones and prevent Osteoporosis.

Proper diagnosis and early treatment can help reduce the risk of Osteoporosis. Treatment should be initiated as early as possible. To prevent menopausal bone-loss, estrogen replacement therapy, calcitonin, bisphosphonate, parathyroid hormone therapy and other medications should be considered.

How to prevent Osteoporosis?

The best ways to prevent Osteoporosis and to protect your bones are:

- Exercise, especially weight-bearing ones, helps in strengthening bones. In an inactive person, these exercises should be started slowly and to be done for short period of time and later on can be increased to more frequently. Brisk-walking, jogging, climbing stairs are especially good. Muscle-building exercises are not recommended for people with Osteoporosis
- Diet rich in calcium such as milk, cheese, yoghurt, green leafy vegetables, nuts especially almonds and seafood as fish is advisable. Vitamin D may be obtained from eggs, liver or spending 15 minutes in sunshine is good
- Avoid caffeine and meat to conserve calcium
- Eliminate smoking and excessive alcohol use which cause bone loss and increase your risk for a fracture



Trigger Points

What is a trigger point?

Myofascial pain syndrome is a common painful muscle disorder caused by myofascial trigger points. A Trigger Point is a hyperirritable spot in skeletal muscle that is associated with a hypersensitive palpable nodule in a taut band. The spot is painful on compression, and can give rise to characteristic referred pain, tenderness, motor dysfunction, and weakness in the muscle.



Dr Janhavi Rankhambe
Consultant Physiotherapist

How does it occur?

- Lack of exercise, prolonged poor posture, joint problems, occupational or recreational activities that produce repetitive stress on a specific muscle or muscle group commonly cause chronic stress in muscle fibers, leading to trigger points.
- Muscles are sprained when they are placed under an excessive physical load. The sprain is usually confined to one or two small muscles fibers within the main body of the muscle causing rupture of a few muscle cells. A painful taut band develops within the affected muscle sprain site, often referred to as an active trigger point.
- At a trigger point, there is accumulation of metabolic wastes. This increases the contraction of muscle, which heightens local muscle pressure. The increased pressure reduces blood flow through arteries and veins, intensifying the adverse process even further.

What are its effects?

Trigger points can exist in two states, either active or latent.

1. Active trigger points cause discomfort even at rest.
2. In most people, the initial sprain heals naturally, the pain may resolve but the taut band remains, producing a latent trigger point. This does not normally cause pain unless it is prodded, rolled around, or stretched.

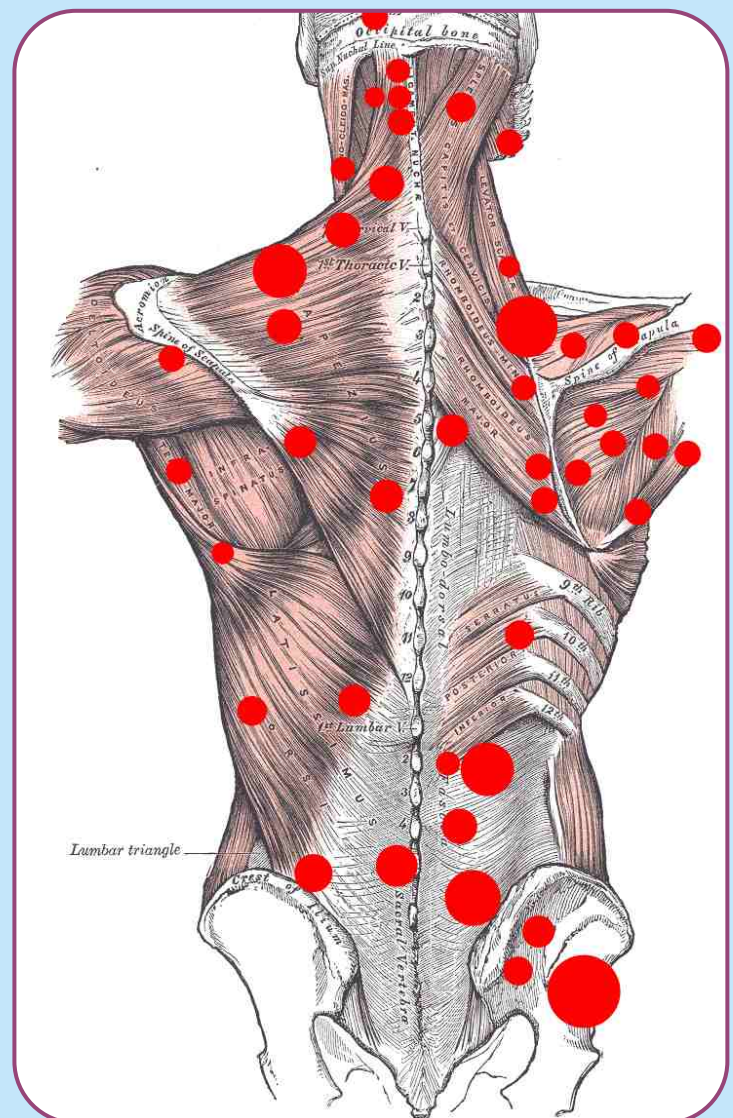
Local examination reveals increased muscle tension and muscle shortening. Increased muscle tension is the primary side effect of trigger points and pain is the most common secondary effect. Referred patterns of sensation such as sharp pain, dull ache, tingling, pins and needles, and hot or cold sensations are known to be associated.

How to treat a trigger point?

The aim of physiotherapy treatment is to eliminate pain by increasing flow of blood and oxygen to the affected tissues. In addition, the swelling and stiffness are reduced causing muscles to relax and promotes healing. The therapy includes:

1. Deep point pressure over trigger points
2. Electrical modalities like:
 - Ultrasonic therapy to reduce swelling and stiffness
 - Interferential therapy for referred pain
 - Strong Surge Faradic Contraction of the muscle to release the taut band

3. Exercises are important to regain the flexibility of the muscle fibers and prevent further episodes of latent trigger points turning active
4. Postural correction helps to maintain the normal muscle alignment



Launch of Hiranandani Orthopaedic Medical Education (HOME) at Dr L H Hiranandani Hospital

Dr LH Hiranandani Hospital, Powai announces the launch of a research unit dedicated to Orthopaedic Surgery. Hiranandani Orthopaedic Medical Education (HOME) submitted its first international paper to the Journal of Bone and Joint Surgery (British Volume) in March 2009. HOME is a department that is dedicated to the field of clinical research in Orthopaedics.

Awards

The hospital is recipient of the IMC Ramkrishna Bajaj National Quality Award for the year 2008 (Award evaluation process is based on the Malcolm Baldrige criteria). The hospital has also received the prestigious International Asia Pacific Award (IAPQA) conferred by the Asia Pacific Quality Organization (APQO). This is for the first time in India that a hospital has won the award. The bottom line being this hospital is known to render quality healthcare.

Hiranandani College of Nursing

The Hiranandani College of Nursing (HiCON) marks the Hiranandani Group's foray into healthcare education. The College is appropriately located on the third and the fourth floor of a magnificent edifice called the Knowledge Park.

The College will provide for an excellent Nursing curriculum (in line with the Indian Nursing Council Regulations) and also leadership skills. The classrooms are spacious and a clinical skills laboratory that is equipped with the state-of-the-art imported simulators.

The simulation lab will enable the students to prepare and handle real life like situations such as cardiogenic shock, hemorrhage, respiratory difficulty and the like.

To widen the education net, the Group management is in talks with offshore Groups for students and also faculty exchange program.



Orthopaedic Humour !?!



3 orthopaedic surgeons took 55 days to do a jigsaw and were proud of their achievement.
When asked why they were so proud they said because it said 2-3 years on the box.

At an orthopaedic meeting how can you spot the academic orthopaedic surgeon?
He's the one who can just get his knuckles off the floor!

What's the difference between a carpenter and an orthopaedic surgeon?
A carpenter knows more than one antibiotic!

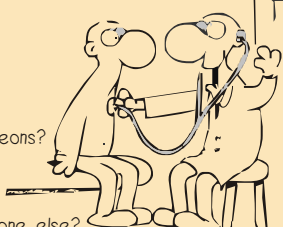
How do you spot the orthopaedic surgeon's car in the car park?
It's the Porsche with a comic on the back shelf!

What do you call two orthopaedic surgeons looking at a chest X-ray?
A double blind study.

The definition of shifting dullness - *an orthopaedic ward round.*

Why do anaesthetists take an instant dislike to orthopaedic surgeons?
Because it saves time

How do you get an Orthopaedic Surgeon to refer you to some one else?
Ask him the time.



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Patient sitting on the floor with
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