

CONDROPLASTY

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ROLL NO. - 24

• Condruoplasty is a surgical procedure used to smooth damaged cartilage in the knee.

• Condruoplasty is done arthroscopically. This means that a thin instrument made up of a camera and light is inserted into the knee through a very small incision, allowing the surgeon to assess and remove the damage.

Types → There are three methods of grafting cartilage defects, including

(ii) Periosteal grafting

(iii) Osteochondral grafting (mosaicplasty)

and articular cartilage stem cell paste grafting. Periosteal grafting are harvested from the perichondrial tissue and grafted to the articular cartilage defect.

Cartilage grafting → is a surgical procedure that replaces damaged cartilage with healthy cartilage from a non-weight bearing joint.

Cartilage grafting is performed to correct joint dysarrhythmia and assist restore the weight-bearing capability of the affected joint.

Periosteal graft → A graft of periosteum, usually placed on bone bone.

Grading of Cartilage Lesions

Grade	MRI	Arthroscopy.
I	Signal Heterogeneity	softening
II	Fissuring	flaking or fissuring
III	Partial thickness loss	Partial thickness loss
IV	Complete loss of cartilage	Full thickness loss (Exposed bone.)

Recovery → Walking without crutches approximately 6-8 weeks after surgery.

Back to work within 3-4 months following surgery. If labour, desk type work may return 2-3 weeks following surgery.

Progress back to sports after 3-4 months.

Procedure → The surgeon will make small incisions around the knee, each measuring approximately 1/2 an inch. The arthroscope will be inserted, allowing the surgeon to see the inside of your knee on a monitor. A special instrument may be inserted to pump fluid into the joint to expand

if for better look.

Small surgical instruments are used to remove only loose fragments and leave alone the damaged cartilage.

Once finished, the added fluid will be drained and the incisions closed with a stitch each.

If the surgeon finds another abnormality in the knee, it may also be repaired during the procedure.

Conditions / symptoms treated → → → Trauma to the knee

+ Degenerative conditions, such as arthritis.

The procedure treats a variety of symptoms, including

+ knee joint pain - - stability issues

- popping, locking or "giving" of the knee.

Post-operative management (2)

This five-phased program approach can be utilized for both conservative and surgical patellofemoral clients. This systematic approach allows specific goals and criteria to be met. Once goals and criteria are attained, the rehabilitation process can progress safely.

Ultimate Goal of program → Improve functional status.

- ii) Normalize biomechanical forces.
- iii) Improve strength / Power / Endurance.
- iv) Decrease Pain / Inflammatory status.

Acute Phase (usually post-operative days 1-5) → Maximal protection
Goals → 1. Relieve pain, swelling and inflammation.

2. Retard muscle atrophy.

3. Increase ROM and flexibility.

⊙ FWB, unless otherwise specified by physician.

⊙ Ice, Compression, Elevation.

⊙ Strengthening Exercises

- Quadriceps setting and multi-angle isometrics (non-painful) 90° , 75° , 60° , 45° .

- Straight leg raises (Hip abduction not done with lateral compression syndrome).

- Gentle standing or prone hamstring curls as tolerated.

⊙ Electrical stimulation if needed (EMS, TMS, HUGO, Biofeedback).

⊙ Flexibility. LE stretches (Especially hamstring/gastroc and also ITB if needed).

ROM Exercises - Heel slides to tolerance, prone / supine "knee hang" for extension.

Patient Education regarding activities, pathomechanism.

Avoidance programs - Squatting, kneeling, ~~exercise~~ excessive knee flexion, stairs.

Sub-acute Phase (usually 1-2 weeks post op) Moderate Protection → Progress to phase two when:

1. Pain and swelling resolve
2. ROM is good.
3. Strong visible quadriceps contraction.

Avoidance programs → Squatting, kneeling, stairs.

Chronic Phase (usually 2-4 weeks post-op) Minimal Protection

1. Progress to phase three when:
2. ROM and swelling WNL
3. Pain is minimal to none.

Goals - 1. Achieve maximal strength and Endurance.
- Continue SLR and other Isotonic knee Exercises.
- Continue mini-squats.
- Cryotherapy post Exercise
- Advance closed kinetic chain activities (leg. press, shuttle).

Advanced strengthening phase → Patients with physical work requirements as a goal to return to high levels activities may remain in therapy for the advanced strengthening phase.

Goals - 1. Increase strengthening / increase power.

Criteria for advanced strengthening phase 4

1. 7th Endurance
2. Full ROM
3. ↑↑ neuromuscular control
4. Strength s/s
5. Fast speed training
6. No Episodes of giving way.

Exercises

4. Quad Program

1. Isotonic knee extension
2. 1/2 squats (gradually ↑ weight)
3. Progress leg press
4. ↑ height of step up

4 Endurance Program.

1. Bicycle (30 mins or more)
2. Elliptical
3. Pool Running
4. Stairmaster.

Fast speed training

1. Exercise tubing (Bulg)
2. Fast hamstring curls
3. Fast hip Ext/ Flex.

Balance / Agility Drills or 1. Bulg kat system

2. Balance board (single leg)
3. unilateral balance on unstable surface
4. Agility training (lateral shuffle, carioca, etc).