



**Kalyani's
Knee & Shoulder
Clinic**

कल्याणी घुटना एवम कंधा क्लिनिक

Multiple Ligament Knee Injury

Patient Awareness | Knee Preservation &
Sports Injury

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What is a multiple ligament knee injury? A multiple ligament knee injury means damage to two or more major knee stabilisers, such as the ACL, PCL, MCL, LCL or posterolateral corner. It is a serious injury and may occur with knee dislocation, even if the knee has gone back into place before medical assessment.

Knee preservation focus: Early recognition, correct classification and specialist treatment can protect cartilage, meniscus, nerves, blood vessels and limb alignment. Restoring stability reduces repeated giving-way episodes and may lower the risk of early arthritis or future knee replacement.

Mode of injury

- Road traffic accident, dashboard injury or fall from height.
- High-energy twisting injury during sports, tackle or collision.
- Knee dislocation or near-dislocation that may spontaneously reduce.
- Severe varus/valgus force, hyperextension or rotational trauma.
- May be associated with meniscus, cartilage, fracture, nerve or blood vessel injury.

Examination and diagnosis

History: injury mechanism, swelling timing, instability, previous injuries, sports/work demands and medical fitness.

Inspection: deformity, bruising, swelling, wounds, gait, range of motion and quadriceps control.

Ligament tests: Lachman/anterior drawer, posterior drawer/sag sign, varus-valgus stress, dial test and pivot-shift when safe.

Neurovascular check: pulses, capillary refill, sensation and foot/ankle power must be documented. Urgent vascular assessment may be needed.

Imaging: X-rays check dislocation, avulsion or fracture; MRI maps ligament, meniscus and cartilage injury. CT angiography may be needed.

Common symptoms

- Severe knee pain at injury, often with a pop or giving-way episode.
- Rapid swelling, bruising and difficulty bearing weight.
- Marked instability: knee feels loose or shifts in more than one direction.
- Reduced movement, stiffness or inability to fully straighten/bend the knee.
- Numbness, tingling, foot weakness, cold foot or colour change are warning signs.

Technical details

Injury mapping: each injured structure is identified: ACL, PCL, MCL, LCL/PLC, meniscus, cartilage, bone, nerve and vessel.

Repair vs reconstruction: avulsion injuries may be repairable early; midsubstance tears often need reconstruction using graft tissue.

Timing: treatment may be acute, delayed or staged depending on swelling, skin condition, range of motion, associated injuries and fitness.

Surgical planning: tunnel position, graft choice, fixation order and tensioning are planned to restore stability and avoid stiffness.

Rehabilitation: bracing, protected weight-bearing, range-of-motion control and progressive strengthening are individualised.

Classification of Multiple Ligament Knee Injury

Classification helps communicate severity, identify hidden injuries and plan treatment. The exact treatment still depends on the patient, examination, X-rays/MRI, nerve-vessel status and tissue condition.

Class / Pattern	Ligaments involved	Clinical importance
KD I	One cruciate ligament plus one collateral/side structure	Can still be unstable; associated meniscus/cartilage injury must be assessed.
KD II	Both cruciate ligaments (ACL + PCL)	High-energy pattern; careful neurovascular assessment is essential.
KD III-M	ACL + PCL + MCL / medial side	Common knee dislocation pattern; medial repair/reconstruction may be required.
KD III-L	ACL + PCL + LCL / posterolateral corner	Often more complex; missed PLC injury can cause persistent instability or graft failure.
KD IV	ACL + PCL + medial and lateral side injuries	Very severe global instability; specialist reconstruction is usually needed.
KD V	Knee dislocation pattern with fracture	Fracture care and ligament strategy must be coordinated.
Modifiers	Open injury, vascular injury, nerve injury, compartment syndrome	These are urgent issues and may change timing, priorities and prognosis.

Treatment options

Initial / emergency care

- Splinting or hinged brace to protect the knee.
- Pain relief, ice, elevation and crutches.
- Careful assessment of pulses, nerves and skin wounds.
- Urgent reduction/stabilisation if the knee is dislocated.
- Early referral to a knee ligament specialist.

Surgical treatment

- Often needed for high-grade instability or knee dislocation patterns.
- Combined ACL/PCL/PLC or avulsion fractures may require repair or reconstruction.
- Surgery may be single-stage or staged depending on swelling, stiffness and skin condition.
- Meniscus, cartilage or fracture problems may be treated at the same time.

Non-operative treatment

- May be considered for selected low-grade, partial or medically unfit cases.
- Uses bracing, protected weight-bearing and structured physiotherapy.
- Goals: reduce swelling, restore motion and build quadriceps/hamstring control.
- Close follow-up is essential; persistent instability may need surgery.

Rehabilitation

- Recovery is stepwise and can take many months.
- Brace and weight-bearing restrictions are followed as advised.
- Physiotherapy restores movement, strength, balance and gait.
- Return to work/sport requires stable knee, strength testing and surgeon clearance.

When to seek urgent care

- Major trauma, deformity, open wound or suspected knee dislocation.
- Foot numbness, tingling, weakness, foot drop or cold/pale foot.
- Severe swelling, inability to bear weight or uncontrolled pain.
- Locked knee, inability to straighten the knee, or repeated giving-way episodes after injury.

Knee preservation: why early specialist treatment matters

Problem if missed	Possible consequence	How treatment helps preservation
Ongoing instability	Meniscus/cartilage damage, recurrent falls, loss of confidence	Stability restoration protects soft tissues and function
Combined PCL/PLC or ACL injury	Abnormal joint loading and graft failure if PLC is missed	Complete injury mapping improves surgical planning
Delayed rehabilitation	Stiffness, muscle wasting and slower return to activity	Supervised staged rehabilitation restores motion and strength
Unrecognised nerve/vascular injury	Foot weakness, circulation risk or delayed emergency care	Early neurovascular assessment protects limb function

Kalyani's Knee & Shoulder Clinic

For multiple ligament knee injury, knee dislocation patterns, sports injury, arthroscopy, reconstruction and rehabilitation guidance

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Note: This handout is for patient education only. Final diagnosis and treatment should be individualised after orthopaedic consultation, neurovascular assessment and appropriate imaging. Sources reviewed: standard orthopaedic guidance and peer-reviewed multiple ligament knee injury literature.