Kalyani's Knee & Shoulder Clinic

कल्याणी घुटना एवम कंधा क्लिनिक

Posterolateral Corner (PLC) Knee Injury

Patient Awareness | Knee Preservation & Sports Injury

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What is a posterolateral corner injury? The posterolateral corner is a group of stabilising structures on the outer-back side of the knee. Important structures include the fibular collateral ligament, popliteus tendon, popliteofibular ligament and posterolateral capsule. Together they control varus opening, external rotation and abnormal backward/rotational movement of the tibia.

Knee preservation focus: A missed or untreated PLC injury can lead to repeated giving-way, abnormal loading, meniscus/cartilage damage and failure of ACL/PCL reconstruction. Early diagnosis and correct treatment help restore stability, protect cartilage and preserve the patient's natural knee for the long term.

Mode of injury

- Direct blow to the inner side/front-inner side of the knee causing the knee to open outwards (varus force).
- Hyperextension injury, especially when combined with rotation.
- Twisting injury during football, kabaddi, basketball, skiing or a fall.
- Road traffic accident, dashboard injury, bike injury or high-energy trauma.
- May occur with ACL, PCL, meniscus, cartilage, fracture or knee dislocation injuries.

Common symptoms

- Pain and tenderness on the outer-back side of the knee.
- Swelling, bruising and difficulty walking or bearing weight.
- Feeling that the knee gives way, especially on uneven ground or while changing direction.
- Varus thrust or bowing-out feeling while walking.
- Difficulty with running, pivoting, stairs or squatting.
- Numbness, tingling or foot weakness if the common peroneal nerve is affected.

When urgent review is needed

- Severe swelling, deformity, open injury or inability to bear weight.
- Foot drop, numbness, tingling, cold foot or weak pulses.
- High-energy accident, suspected knee dislocation or multiple ligament injury.
- Repeated giving-way after a previous ACL/PCL surgery or knee injury.

Examination and diagnosis

History: Injury mechanism, timing of swelling, instability episodes, sports/work needs and previous ligament surgery are assessed.

Inspection: Swelling, bruising, alignment, gait, varus thrust, quadriceps control and range of motion are checked.

PLC-specific tests: Varus stress test at 0° and 30°, dial test at 30° and 90°, posterolateral drawer, reverse pivot shift and external rotation recurvatum tests may be used.

Associated injuries: ACL, PCL, MCL/LCL, meniscus and cartilage assessment is important. Nerve and vascular examination should not be missed.

Imaging: X-rays check fracture or avulsion. MRI confirms the soft-tissue injury and associated damage. Stress X-rays may help quantify side-to-side opening in selected cases.

Technical details

Structures involved: The main stabilisers include the fibular collateral ligament, popliteus tendon, popliteofibular ligament and posterolateral capsule.

Why alignment matters: Chronic PLC laxity and varus malalignment can overload the knee. In some chronic cases, alignment correction such as high tibial osteotomy may be considered before or with ligament reconstruction.

Surgical principle: The goal is to restore varus and rotational stability using repair in selected acute avulsions or reconstruction with grafts when structures are torn or stretched.

Posterolateral Corner Knee Injury - Classification & Treatment

Classification

Type / Grade	Typical meaning	Patient relevance
Grade I	Mild sprain with tenderness but no significant instability.	Usually heals with protection, brace/physiotherapy and gradual return.
Grade II	Partial tear with increased laxity but some end point.	Often treated without surgery if isolated and stable, but needs follow-up.
Grade III	Complete tear with marked varus/rotational instability.	Often needs surgical repair/reconstruction, especially in active patients.
Isolated PLC	Only the posterolateral corner is injured.	Treatment depends on grade and stability.
Combined PLC + ACL/PCL	PLC injury occurs with cruciate ligament injury.	Must be recognised to protect cruciate reconstruction and knee cartilage.
Acute vs chronic	Acute injuries are recent; chronic injuries present late with persistent instability or varus thrust.	Chronic cases may need staged planning and alignment assessment.

Treatment options

Non-surgical treatment

- Best suited for low-grade isolated PLC sprains with a stable knee.
- Protection, rest, ice, compression, elevation and pain control initially.
- Brace and crutches when needed to protect healing tissues.
- Physiotherapy to restore motion, quadriceps/hamstring strength, balance and gait.
- Gradual return to work/sport only after pain, swelling and instability improve.

Surgical treatment

- Considered for grade III PLC injury, persistent instability or high-demand athletes.
- Important for combined ACL/PCL or multiple ligament injuries.
- Acute bony avulsions may be repaired in selected cases.
- Reconstruction uses graft tissue to restore the main PLC stabilisers.
- If chronic varus alignment is present, osteotomy may be needed to protect the reconstruction.

Rehabilitation and knee preservation: Recovery is stepwise. Goals include swelling control, safe range of motion, protection of repair/reconstruction, muscle strengthening, balance, walking correction and objective return-to-work/sport testing. Correct treatment of PLC injury helps prevent repeated instability, meniscus/cartilage overload and early arthritis.

Why PLC diagnosis matters

If PLC injury is missed	If diagnosed and treated properly
Persistent giving-way and varus thrust	Improved knee stability and confidence
Higher stress on ACL/PCL reconstruction	Better protection for ligament reconstruction
Meniscus and cartilage overload over time	Knee preservation by reducing abnormal loading
Progression to pain, stiffness and arthritis	Better chance of returning to work/sport safely

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For posterolateral corner injury, knee instability, sports injury, ligament reconstruction and knee preservation guidance

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