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# Management of Acute Patellar Dislocation: A Case Report



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## Abstract

**Objective:** The purpose of this case study is to describe the evaluation and management of patellar dislocations and the different approaches used from providers in different countries.

**Clinical Features:** An individual dislocated her left patella while traveling abroad and received subsequent care in Thailand, China, and the United States.

**Intervention and Outcome:** Nonoperative treatment protocols including manual closed reduction of the patella, casting of the leg, and rehabilitation exercises were employed.

**Conclusion:** Receipt of care when abroad can be challenging. The patient's knee range of motion and pain continued to improve when she was diligent about performing the home exercise program. This case highlights the importance of a thorough examination, a proper regimen of care, and patient counseling to ensure a full recovery and minimize the chance of re-injury.

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## Introduction

Acute patellar dislocation is a common orthopedic condition that occurs when the confinement of the patella is disrupted from the patella-femoral groove,

most often laterally.<sup>1</sup> These injuries can result in damage to the medial patellofemoral ligament (MPFL) and may cause osteochondral fractures.<sup>2–4</sup> The average incidence of first-time patellar dislocation is 5.8 per 100 000.<sup>1,5</sup> Of these patients who sustain a first-time patellar dislocation, 44% to 70% will experience a subsequent recurrent dislocation.<sup>1</sup> A previous history of contralateral patellar dislocation increases the risk of redislocation by 6-fold and after a second dislocation

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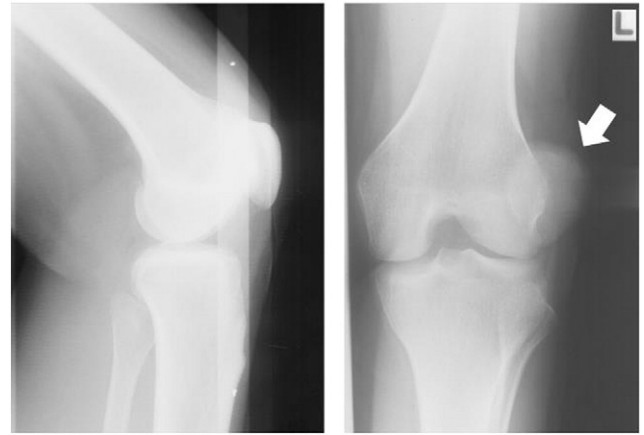
the risk of re-dislocation increases by 49%.<sup>5</sup> Primary dislocations of the patella are often associated with sports.<sup>5</sup> One study of first-time dislocations reported that 61% of dislocations happened during sporting events and 9% occurred while dancing.<sup>5</sup> Up to 55% of those athletes do not return to their sporting activities, and 58% have restrictions with strenuous activity 6 months after their date of injury.<sup>4</sup> There is a higher risk of occurrence in adolescent females along with persons with multiple predisposing factors including increased quadriceps angle, patella alta, patellar hypermobility, vastus medialis weakness, increased femoral anteversion, and shallow femoral trochlear groove (Fig 1).<sup>5,6</sup>

Most first-time traumatic patellar dislocations are treated nonoperatively with a closed reduction technique unless there is evidence of osteochondral fracture, a displaced osteochondral fragment, or gross patellofemoral instability.<sup>7,8</sup> The presence of large amounts of sub-patellar effusion which may require aspiration of fluid, raises the likelihood of a significant osteochondral fracture.<sup>4</sup> While most patients affected by this injury report to a hospital emergency department for initial assessment and treatment, they may present to a chiropractic physician or general practitioner's office, especially in rural areas. They often present with an already reduced patellofemoral joint and a history of feeling their knee "going out of place".<sup>3,5</sup> Treatment and outcomes of first-time patellar dislocations vary dependent upon the extent of the injury and the access to standardized care.<sup>4,9</sup>

There is a debate as to what is the best treatment option for primary patellar dislocations.<sup>4,6,8</sup> Nonoperative treatment protocols include a manual closed reduction of the patella followed by casting or splinting

- Age (10 -30 years old)
- Female gender
- Family history of patella dislocation
- Physically active
- Increased Q angle
- Increased femoral anteversion
- Valgus knee deformity
- Shallow femoral trochlear groove
- Patella alta
- Patellar hypermobility
- Excessive lateral patellar tilt
- Vastus medialis weakness
- Contracted Iliotibial band
- Hypoplastic lateral condyle
- Generalized ligamentous laxity

**Fig 1.** Risk factors for patella dislocations.



**Fig 2.** Anterior-posterior and lateral radiographs of the left knee before manual closed reduction of the dislocated patella under general anesthesia at the Ranong Hospital.

of the leg and a series of rehabilitative exercise afterward.<sup>1,9,10</sup> Many studies report that the risk of redislocation is equal with either surgical or nonsurgical treatment.<sup>1,6,8,11</sup> Recurrent patella dislocations, especially in the absence of trauma, have a poorer prognosis for stabilization and are further prone to re-dislocation.<sup>4,5</sup> These injuries should be considered as a subset of patellar dislocations and may require immediate advanced imaging and surgical repair.<sup>11,12</sup> A thorough examination and diagnosis of this condition, with an emphasis on identification of surgical indications, will increase the likelihood of successful outcomes with conservative methods.<sup>1,11</sup> Severe damage to the supporting patellar ligaments, especially the medial retinaculum or MPFL, or osteochondral injury which may warrant surgical stabilization should be identified early.<sup>1,5,12,13</sup>

The purpose of this case study is to describe the management of a patient with a first-time patellar dislocation who received treatment while in Thailand, China, and the United States.

## Case Report

A 24-year-old woman was hiking on a remote beach off the coast of Ranong, Thailand, when she lost her footing and fell, spraining her left knee. The patient reported a left knee deformity, an immediate onset of severe pain and swelling, and inability to bear weight. She was transported by boat and taxi to the nearest hospital emergency department in Ranong, Thailand. Anterior-posterior and lateral plain film radiographs identified a laterally dislocated patella (Fig 2). No

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