

# Journal of Sports Medicine and Allied Health Sciences: Official Journal of the Ohio Athletic Trainers Association

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Volume 3

Issue 1 *Ohio Athletic Trainers' Association Special Edition*

Article 21

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May 2017

## Patellar Dislocation: A Deeper Look at Various Knee Pathologies in Young Female Athletes

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### Recommended Citation

Coulter, Cade (2017) "Patellar Dislocation: A Deeper Look at Various Knee Pathologies in Young Female Athletes," *Journal of Sports Medicine and Allied Health Sciences: Official Journal of the Ohio Athletic Trainers Association*: Vol. 3 : Iss. 1 , Article 21.

DOI: 10.25035/jsmahs.03.01.21

Available at: <http://scholarworks.bgsu.edu/jsmahs/vol3/iss1/21>

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## ***PATELLAR DISLOCATION: A DEEPER LOOK AT VARIOUS KNEE PATHOLOGIES IN YOUNG FEMALE ATHLETES***

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### ***OBJECTIVE***

The objective of this case study was to inform and educate medical professionals of different signs, symptoms, and risk factors that may lead to serious knee or patellar injury as well as methods for prevention through the treatment of a patellar dislocation.

### ***MEDICAL HISTORY***

This case study concerns a 15-year-old female soccer player. The athlete under study presented with a knee valgus and hip IR static position, very little quadriceps definition, overly pronated feet, and a high Body Mass Index. Patient had no previous history of knee injury. Upon initial injury during a mid-season practice she reported a loud “pop” and immediate pain in her right knee. She stated that her patella had “come out of place and moved back in after falling to the ground and straightening her leg.” While moving towards an injury cart for transport back to the ATR, her patella dislocated again and was reduced by the Head AT on the scene.

### ***DIFFERENTIAL DIAGNOSIS***

Initial diagnosis was a patellar dislocation. Any other fracture or ligamentous damage was ruled out by the Team Physician. The main focus of this case study is to analyze the risk factors of ACL Tears, Patellofemoral Pain Syndrome, and Patellar Dislocations and how they apply to this athlete specifically as well as young female athletes as a population.

### ***RELATED LITERATURE***

Literature analyzed for this study was produced by Mitchell et al. Sillanpaa et al.

Vitale et al. and Shea et al. Common themes seen in each of these articles highlighted the predisposition to patellar injuries in an athlete in a knee valgus, hip internally rotated position. When compared to differential diagnoses, this was the same across the board. To follow up this observation, great emphasis was placed on the idea that young female athletes are at a significantly greater risk than any other population for patellar dislocations. Discrepancies arose when it came to injury management. Treatment strategies ranged from immediate immobilization for an extended period to immediate weight bearing and full range of motion. These inconsistencies in the literature must be addressed moving forward.

### ***TREATMENT***

The athlete was injured on a day when the team physician was in the clinic, who immediately evaluated the injury. After a full evaluation it was decided that the athlete would not be sent for imaging but would be immobilized and begin a progression to weight bearing and eventually a functional return to play with a patellar brace. Treatment in this Case Study is focused on addressing the injuries listed in the Differential Diagnoses above by using not only quad strengthening techniques but hip and core exercises as well to increase the stability of the kinetic chain and prevent knee injuries such as this in the future.

### ***CLINICAL APPLICATIONS***

This case allows clinicians to look at a specific member of a high-risk population and

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evaluate her physiology and how it predisposes her to significant injury. Patellar dislocations are a gruesome, yet fairly preventable injury. While it may be difficult to implement, it is possible to put preventative exercise measures in place to reduce risk of serious knee injury in this population. Patellar dislocations are also interesting in that first-time dislocators are not typically sent for imaging but there is little consensus as to why. There is also a wrinkle in the literature when it comes to immediate care and treatment. Strategies range from immediate mobilization and weight bearing to lengthy periods of immobilization before weight bearing. This case study opens the door to further investigate these discrepancies and encourages inquiry into finding a more cohesive plan for a devastating injury.

### **CONCLUSIONS**

Patellar Dislocations are very gruesome and surprisingly common injuries. Given the frequency of injury and the population involved, there is shockingly little consensus in the literature as far as treatment and rehabilitation is concerned. In this case, the athlete was treated conservatively with hip, core, and quadriceps focused rehabilitation

techniques. Positive outcomes were seen for the remainder of the season and the athlete was given a brace. During an off-season workout the patient suffered a patella subluxation and the rehabilitation process had to start over. In addition to inquiry of literature, this case study allows an in depth look at treatment and prevention of various knee pathologies that are seen in young, female athletes across the county.

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**Key Words:** *patella, dislocation, ACL Tear, patellofemoral pain, risk factors, prevention, treatment, rehabilitation*