

# The Proportion of Adolescents Complaining of Anterior Knee Pain with Osteochondritis Dissecans and the Utility of Screening Radiographs in Its Diagnosis

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## Abstract

Osteochondritis dissecans is a rare condition which can cause disabling knee pain in adolescents. Treatment and prognosis hinges upon the stage of the lesion and early detection is paramount<sup>1-3</sup>. Until recently, epidemiologic information regarding OCD in adolescents was unavailable. However in 2013 Kessler et al. demonstrated an incidence of 9.5/100,000 in the general adolescent population<sup>4</sup>. This retrospective chart review looked at the amount of OCD diagnoses in adolescents specifically complaining of anterior knee pain without causative trauma in the years 2009 and 2010 at a major children's hospital. It was noted that 7.5% of children with this presentation had a diagnosis of OCD. This number was over three orders of magnitude higher than the incidence seen in the general adolescent population as established by Kessler and may support the use of screening radiographs in this subset of patients to detect OCD in its early stages.



An example of OCD in an adolescent patient. The lesion can be seen on the posterolateral condyle of the femur.

A total of 134 pediatric patients between the ages of 5-18 were identified over the two year period. Four-view screening radiographs were performed on all 134 patients to rule out the presence of bony abnormality contributing to their anterior knee pain. Of the 134 patients, 10 were identified and diagnosed with OCD (Table 1).

A breakdown of the presentation of OCD of this sample agreed with the general epidemiologic information established in the literature in regards to age at diagnosis (Table 2) and lesion location (Table 4). However this population showed a higher amount of OCD in females as opposed to the generally accepted heightened prevalence in males (Table 3).

## Discussion and Conclusions

OCD is a relatively rare cause of knee pain in the adolescent; however its detection at early stages is key to a favorable prognosis. Given the markedly heightened proportion of cases of OCD noted in this study as compared to the true incidence in the general pediatric population, the use of screening 4 view radiographs may be an effective means of detecting the condition early and preventing unnecessary morbidity in particular subsets of pediatric patients.

## Introduction

Osteochondritis dissecans (OCD) is a rare condition in which avascular necrosis of subchondral bone may lead to fragmentation of the avascular portion commonly into the joint space. OCD can progress to become crippling for adolescents and may require multiple surgeries. If detected in a timely manner, conservative treatment may be utilized to prevent considerable morbidity. We hypothesized that OCD has a high prevalence in pediatric orthopaedic patients complaining of chronic anterior knee pain without inciting trauma. We also hypothesized that 4 view x-ray screening in these patients is an effective diagnostic technique for OCD.

## Methods

- ▣ Retrospective chart review
- ▣ Inclusion criteria:
  - ▣ Chronic anterior knee pain (> 2 weeks)
  - ▣ No causal trauma
  - ▣ Years 2009 and 2010
- ▣ It is standard practice in this clinic to use 4-view radiographs to assess these patients.
- ▣ Radiographs, clinical notes, and demographic data were reviewed.

## Results

Total patients	OCD Diagnoses	OCD Occurrence
134	10	7.46%

Table 1: Occurrence of OCD in adolescent patients complaining of AKP without causal trauma.

Age Group	Number of OCD diagnoses
5-11	4
12-19	6

Table 2: Prevalence of OCD in the 5-11 and 12-19 year old age groups.

Sex	Number of patients	Number of OCD diagnoses	OCD Prevalence by sex
Male	60	3	5%
Female	74	7	9.5%

Table 3: Prevalence of OCD in male and female groups

## Acknowledgements

I wish to thank both Dr. Jeffery Vaughn and Dr. Wade Shrader for their guidance and mentorship during the completion of this project.