

Nationwide Trends in Surgical Treatment for Juvenile Osteochondritis Dissecans: Age Predicts Invasiveness of Treatment

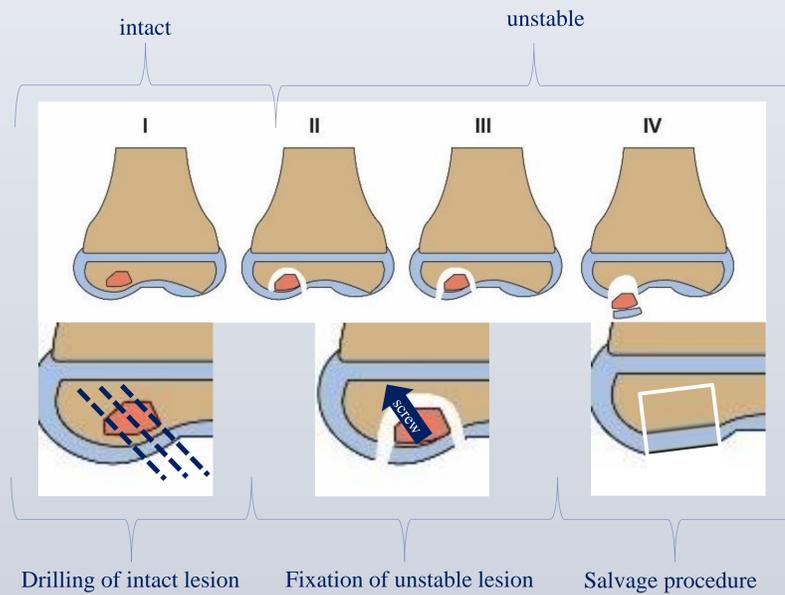
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INTRODUCTION

- Juvenile Osteochondritis Dissecans (JOCD) is a pathologic subchondral bone lesion that may affect the articular cartilage¹
- Incidence of 9.5 per 100,000 in 6-19 year olds²
- Primarily affects the knee in athletic populations aged 12-19, about 4 times more common in males²
- Potential causes are ischemia to the epiphyseal plates, possibly from repetitive microtrauma, or a genetic predisposition^{3,4,5}
- Presents as pain in the joint worsened by exercise, and may develop crepitus and locking as it develops further⁶



- Drilling has higher success rate and lower morbidity from surgical standpoint than fragment fixation or salvage procedures⁷
- Lack of studies looking at JOCD trends at an epidemiological level

OBJECTIVES

- Purpose:** This study seeks to identify surgical and demographic trends in JOCD cases of the knee and provide nation-wide estimates
- Clinical Significance:** Note interesting trends in JOCD treatments to provide a snapshot of the current state of JOCD treatments

METHODS

- Retrospective review using Pediatric Health Information System (PHIS) database to gather data from 49 pediatric hospitals nationally from 2013 to 2018 on JOCD cases of the knee
- Used ICD 9 and 10 codes relating to JOCD of the knee for query
- Classified patients into 8 more specific categories to allow for more in depth analysis
- Used standard descriptive summaries, Chi-square test, and Fisher's exact test to run the analysis

RESULTS

- Identified 3,718 cases of operatively treated JOCD
- 2:1 male to female ratio (2,395:1,322)
- Equal distribution of left vs right laterality of JOCD incidence (1,185 left, 1,131 right, 1,351 unknown)
- Average age for male: 13.8 (range:1-18), Average age for female: 12.4 (range: 2-18)

FIGURE 1

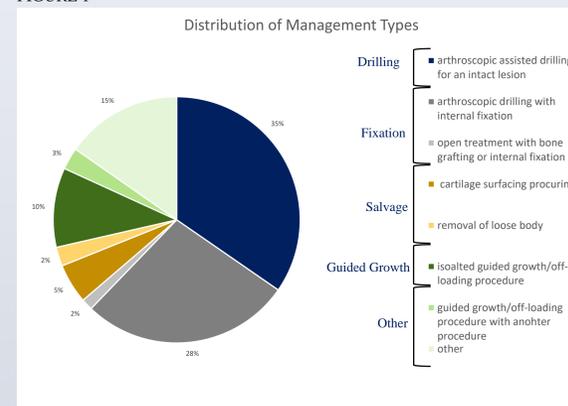


FIGURE 2

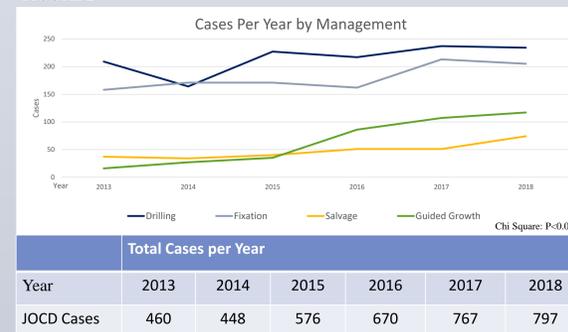


FIGURE 3

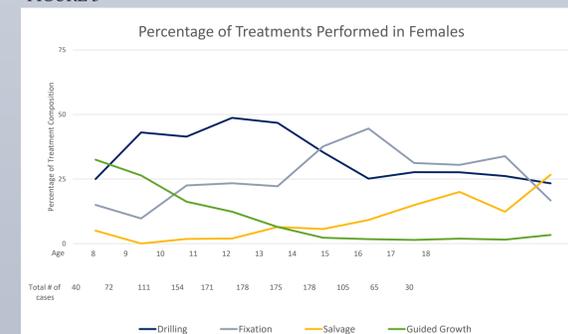


FIGURE 4

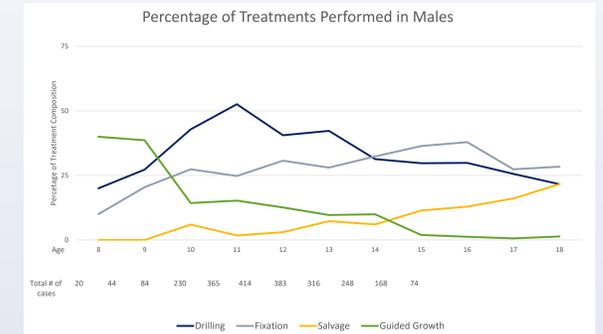
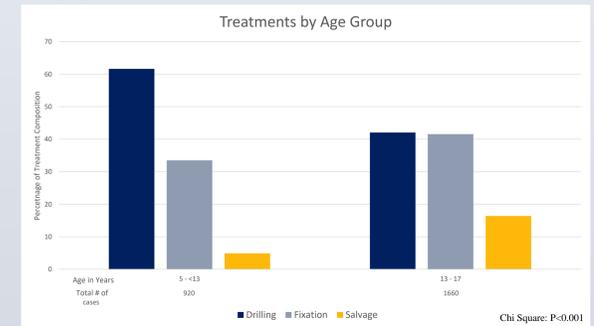


FIGURE 5



LIMITATIONS

- Cannot definitively correlate treatment to stage of lesion
- Not strictly a national database
- Criteria for management categories not all-inclusive

CONCLUSION/DISCUSSION

- Increasing invasiveness of treatments needed with older patients
- Operative cases of JOCD treatment nearly doubled from 2013 to 2018
 - Use of growth modulation (isolated growth/off-loading procedure) is increasing as a treatment of JOCD for younger patients
- 2:1 Male to Female gender ratio contradicts previous literature suggestions of a 4:1 ratio

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