Discussion

• Despite described success and predictors of healing with non-operative management for juvenile OCD, operative intervention for early stage OCD is a valuable treatment option given the unpredictable and long course of conservative treatment.

• Retroarticular and transarticular drilling techniques for juvenile OCD are viable surgical options with successful outcomes reported but complete resolution on imaging can be unpredictable and prolonged with as many as 25% not reaching full radiographic resolution, thus calling into question the true healing of these lesions and success rates with these techniques.

• Retroarticular core decompression, as described here, while similar to the technical note detailed by Lykissas et al., provides a more complete removal of diseased bone with the addition of stem cell biologics. The combination of these techniques has the potential to allow for quicker and more reliable healing of juvenile OCD lesions compared to traditional techniques.

Conclusions

• Retroarticular core decompression with biologic augmentation for early stage, stable OCD lesions of the femoral condyle represents an attractive option for quicker and more reliable surgical intervention than traditional techniques.

• Prospective, comparative studies are needed to determine if this technique is superior to traditional techniques and can become the new gold standard for treatment of early, stable juvenile OCD lesions of the femoral condyle.

References


7. Cold therapy and partial weight-bearing for six weeks. At her 12-week follow-up appointment she was pain free with no tenderness on the medial femoral condyle and full range of motion.

8. X-rays showed complete filling of the lucency. 13-week postoperative MRI showed post-surgical scar with resolution of the OCD (Fig. 2).

9. At this point, she was allowed a progressive return to full activity.

● Present a novel all-epiphyseal retroarticular core decompression technique with biologic augmentation for a stable osteochondritis dissecans (OCD) lesion of the femoral condyle in a skeletally immature patient.

● This technique is an alternative to traditional transarticular (i.e. antegrade) drilling and retroarticular (i.e. retrograde, all-epiphyseal, or intraepiphysseal extra-articular). 1-3

Methods

Patient Presentation and Preoperative Work-up

• An eleven-year-old skeletally immature female presented with activity associated right knee pain.

• Physical exam was non-contributory, but X-ray imaging diagnosed an OCD lesion of the medial femoral condyle.

• MRI showed a 1.2 x 1.7 cm lesion (Fig. 1).

• After 5 months of conservative treatment, her clinical exam deteriorated with reproducible tenderness to palpation over her medial femoral condyle and no signs of healing on imaging. The family opted for surgical intervention.

Surgical Procedure

• Arthroscopy confirmed the cartilage was intact and the lesion was stable to probing, i.e., a “cue ball” appearance.

• 60 cc of bone marrow was aspirated from the ipsilateral anterior iliac crest and concentrated in a centrifuge.

• Using fluoroscopy, a guide pin was placed in a retroarticular fashion in the center of the OCD lesion with the start point distal to the distal femoral physis.

• A 7-mm ACL cigar drill was used to drill over the pin into the lesion. A curette was used to further remove the diseased bone.

• Approximately 1.5 cc of bone marrow aspirate concentrate (BMAC) was injected into the depth of the lesion followed by a mixture of BMAC and demineralized bone matrix to hold the injected BMAC in place.

Postoperative Course

• Cold therapy and partial weight-bearing for six weeks.

• At her 12-week follow-up appointment she was pain free with no tenderness on the medial femoral condyle and full range of motion.

• X-rays showed complete filling of the lucency.

• 13-week postoperative MRI showed post-surgical scar with resolution of the OCD (Fig. 2).

• At this point, she was allowed a progressive return to full activity.

Results

Preoperative MRI (T1) showing the stable OCD lesion of the medial femoral condyle in a skeletally immature patient

13 week postoperative MRI (T1) status post retroarticular drilling with injection of BMAC and DBX for stable OCD of the medial femoral condyle in a skeletally immature patient. Note the post-surgical scar with resolution of the OCD