**Introduction:**

Chondral defects are an important and often underestimated source of anterior knee pain, and trochlear groove osteochondral lesions may be the only abnormality on MR to explain a patient’s clinical symptoms. The complaints and clinical findings are often nonspecific, and MR has been shown to be the best imaging modality for evaluation of articular cartilage. The orthopedic literature confirms the clinical importance of identifying trochlear groove injuries. In a review of over 30,000 arthroscopies, Curl et al. showed that up to 15% of knees demonstrated trochlear groove osteochondral defects. The purpose of our study was to evaluate and describe the MR imaging findings of isolated trochlear groove osteochondral defects (lunge lesion), as well as address the mechanism of injury.

**Material and Methods:**

We retrospectively evaluated MR imaging findings of all knee MRI exams performed at our institution over the past five years. 20 patients with imaging features of isolated osteochondral trochlear groove defects were selected. MR imaging parameters included routine T1 weighted axial, coronal, and sagittal spin echo and T2 weighted fast spin echo sequences in the axial, coronal and sagittal plane. Patients with features of patellofemoral degenerative disease and patellar chondromalacia were excluded from our study. 10 patients underwent arthroscopy following the MRI exams. Findings at arthroscopy were correlated with MRI findings.

**Results:**

The trochlear groove osteochondral defect was found to have low signal intensity characteristics on T1 weighted images and high signal intensity characteristics on T2 weighted images. A cartilaginous defect or area of T2 prolongation was seen with underlying high signal on T2 weighted images in the trochlea, consistent with bone marrow edema. At arthroscopy, chondral abnormalities were visualized in all ten patients who underwent the procedure, confirming the MRI findings. Although the mechanism has classical been described as a dashboard injury, our twenty patients had a variety of traumatic mechanisms including direct trauma, twisting injuries, and hyperextension of the knee.

**Conclusion:**

Isolated trochlear groove osteochondral defects can be well visualized on MRI, and can be a source of unexplained knee pain. The trochlear groove should be included as part of the routine search pattern in evaluating knee MR, as this potentially important finding might otherwise be overlooked. The detection of such lesions can guide the surgeon at arthroscopy and prompt a more vigorous evaluation of the trochlear groove. Emphasis has recently been placed in the orthopedic literature on treatment of cartilaginous lesions, especially with the advent of chondrocyte transplantation techniques. Early and reliable detection of isolated cartilaginous defects therefore can have important clinical implications as these may be effectively treated.

**References:**