Association of trochlear dysplasia with degenerative abnormalities in the knee: data from the Osteoarthritis Initiative.

Abstract:
To evaluate trochlear morphology as a potential risk factor for patellofemoral osteoarthritis, determined by morphological and quantitative measurements of cartilage degeneration using 3-T magnetic resonance imaging (MRI) of the knee. MRI of the right knees of 304 randomly selected subjects, aged 45-60 years, from the Osteoarthritis Initiative (OAI) progression cohort were screened for trochlear dysplasia, defined by an abnormal trochlear depth. Out of 304 subjects, n = 85 demonstrated a shallow trochlea (depth 170°) also showed increased WORMS scores (12.2 ± 1.1 versus 8.6 ± 0.6; P = 0.003). T2 values at the patella were significantly lower in the dysplasia group with a shallow trochlea. However, significance was lost after adjustment for cartilage volume (P = 0.673). Trochlear dysplasia, defined by a shallow trochlea, was associated with higher WORMS scores and lower cartilage volume, indicating more advanced osteoarthritis at the patellofemoral joint.