CT APPLICATIONS AND BEYOND IN CARTILAGE AND CARTILAGE REPAIR

Patellar tilt – An easy and accurate method to evaluate it

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Patellar instability is a common cause of pain and functional impotence of the knee[1]. Recurrent patellar dislocation is often associated with four major risk factors: trochlear dysplasia, patella alta, lateralization of the tibial tuberosity relative to the trochlear groove (TT-GT offset) and insufficient medial retinacular restraint (patellar tilt)[2,3]. In 1980, Delgado-Martins (DM)[4] described the Bicondylo-Patellar angle and reported the values for patellar tilt at different grades of flexion as well as the decreasing of the tilting from full extension to 90º of flexion by performing an axial X-ray study on normal knees.

The computed tomography (CT) scan has great importance in the analysis of the patellofemoral joint, being the first exam to establish some of the pathological threshold levels for the objective patellar dislocation population[5,6], providing some of the guidelines used for surgical correction in terms of trochlear morphology, malalignment, patellar tilt and rotational abnormalities. Knowing the difference in cost and accessibility between these two radiologic tests, our department tried to determine the correlation between these evaluation methods and if DM angle could be considered a measure for screening patellar tilt. 37 randomized knees of both genders have been evaluated under CT scan and axial X-ray view at 30º of flexion, with the data statistically analysed using SPSS®.

Regression analysis did not observe any relationship between the measurements made by each method. Comparing the data, of those with normal values of patellar tilt described by each radiologic method, it was observed that the Bicondylo-Patellar angle has a 100% sensitivity and 31% specificity in detection of patellar tilting. The positive predictive value (PPV) was 81.3% and negative predictive value (NPV) 100%. Although the sample size is small, the data obtained deserve consideration. The lack of correlation between two different evaluation methods was unexpected; however, the 100%f sensitivity and NPV make the method described by Delgado-Martins highly accurate and optimal for screening this bone pathology. This is because it is easily accessible in a simple routine consultation, allowing the use of CT scan for cases whose values are out of normal.

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CASE REPORTS ON CARTILAGE AND CARTILAGE REPAIR

Case Reports: 24 months modified MOCART Scores of All-Arthroscopic ACT with Second look Arthroscopy

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Introduction

The majority of Autologous Chondrocyte Transplantation (ACT) techniques require an arthrotomy for the implantation. The development of the 3-dimensional chondrocyte product co.don chondrosphere (co.don AG, Teltow, Germany) consists of human autologous spheroids in a saline suspension for transplantation. The spheroids can produce cartilage specific matrix and build a 3-dimensional structure. Co.don chondrospheres have been used in clinical practice for the treatment of chondral defects in the knee since 2004(1)

Over the last 6 years, this technique has been used in a variety of cartilage defects with good second look arthroscopy and post-surgery MRIs. To date, more than 150 patients have undergone cartilage resurfacing with this technique and prospective studies are currently ongoing to study the 2-6 year results with outcome scores and follow-up MRIs. We present 2 case studies performed by the senior author (R.S) with the use of co.don as an all-arthroscopic technique for cartilage transplant.