served in all of the cases. The enthalpy change of the process initiated by the temperature change showed marked decomposition. Change in the enthalpy was observed in osteoarthritic cartilage: -1427 J/g (SD: 139). All samples showed a clear denaturation peak on the calorimetric curve, average: 48°C (SD: 3,26).
Conclusions: This study clarifies the previously reported thermoanalytical results, by providing similar sample environment. The use of thermal analysis could be a simple and effective method for controlling the relationship between biomarkers and disease progression. All samples showed a clear denaturation peak on the calorimetric curve, therefore a volume of the curve was easily calculated giving the enthalpy change of the sample. Characterization of the altered metabolism in cartilage that promotes disease progression should lead to future fundamental treatment options that can prevent structural damage.

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FACTORS ASSOCIATED WITH REPEAT MENISCUS SURGERY IN PATIENTS UNDERGOING SUTURE MENISCUS REPAIR

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Purpose: Meniscus repairs have become more common in order to preserve meniscus function and protect the chondral surfaces of the knee. Numerous studies report a high incidence of meniscus repair failures. Our purpose was to determine what factors lead to repeat surgery following suture meniscus repair.
Methods: A single surgeon performed 283 meniscus inside-out suture repairs (age range, 18 to 71 years), including 177 males and 106 females. Ninety-three patients had concurrent ACL reconstruction; 44 additional patients had 2-stage ACL reconstruction. One hundred eighty-one medial and 102 lateral menisci were repaired. Eighty percent (80%) of medial meniscus repairs were in the posterior third, 11% in the middle third, 1% in the anterior third, and 8% extended to all areas of the meniscus. Forty-nine percent (49%) of lateral meniscus repairs were in the posterior third, 26% in the middle third, 22% in the anterior third, and 3% extended to all areas.
Results: Thirty-seven (37) patients (13%) required repeat surgery on their repaired menisci. Eighteen percent (18%) of medial and 10% of lateral repairs required repeat surgery. There were no differences based on age, gender or lesion location. Average time to repeat meniscus surgery was 2.5 years (range, 75 days to 13 years). Thirty-eight percent (38%) of repeat surgeries were within one year, 32% were between one and two years, 16% were between 3 and 5 years, and 14% were greater than 5 years after the initial meniscus repair. Medial repairs required repeat surgery significantly earlier (1.8 years) than lateral repairs (4.5 yrs) (p=0.01). Staged ACL reconstructions had fewer second meniscus surgeries (2%) compared to concurrent ACL reconstructions (16%) (p=0.03). Patients with concurrent ACL reconstructions were 7.6 times more likely to undergo repeat meniscus surgery compared to staged reconstructions [CI: 1.3 to 44.9].
Conclusions: Medial (versus lateral) meniscus suture repairs and repairs with concurrent ACL reconstructions (not staged) were factors that resulted in earlier and higher rates of repeat meniscus surgery. This finding supports performing meniscus repair and ACL reconstruction as separate operations. There were no differences based on age, gender or lesion location.

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STUDY OF CRUCIATE LIGAMENTS IN OSTEOARTHRITIC KNEES AND THEIR ASSOCIATION WITH CLINICAL AND FUNCTIONAL STATUS OF THE KNEE JOINT

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Purpose: The use of posterior cruciate ligament (PCL) retaining or sacrificing implants in Total Knee Arthroplasty remains controversial. Although various authors have demonstrated that degenerative changes do occur in cruciate ligaments in osteoarthritic (OA) knees, not much literature is available stating whether clinical symptoms in OA knee are predictive of the degenerative changes in cruciate ligaments. We studied the microscopic degenerative changes in cruciate ligaments in osteoarthritic knees and its correlation with the macroscopic appearance of anterior cruciate ligaments (ACL), clinically apparent deformities of the arthritic knee and its functional status.
Methods: Study was conducted in 30 osteoarthritic knees undergoing Total Knee Arthroplasty (mean age 61.4 years). These cases were assessed preoperatively using the Knee Society Scoring. Macroscopic appearance of ACL and PCL was classified as normal, abnormal (thinned or sclerotic), or ruptured. Furthur, these ligaments were studied for microscopic degenerative changes which were classified into normal, slight, mild, moderate, and severe (stage 0 to 4) depending on the number of microscopic fields involved. The changes in cruciate ligaments were then compared with the knee score, function score, and deformities (like fixed flexion deformity, varus, antero-posterior and medio-lateral instability) for statistical significance.
Results: Knee Score and Knee Function score ranged from 0 to 43 and 5 to 55 respectively with means of 24 and 30.4 respectively. The gross appearance of ACL was normal in 8 (26.67%), abnormal in 14(46.6%) and ruptured in 8. In all cases PCL appeared to be normal. On microscopy, 4 (13.34%) ACL specimens had no changes while 3 (10%) had slight, 4 (13.34%) mild, 10 (33.3%) moderate and 9 (30%) severe changes. Amongst PCL 4 (13.3%) were normal, 3 (10%) had slight, 12 (40%) mild, 7 (23.3%) moderate and 4 (13.3%) severe degenerative changes. The predominant changes were presence of zones of loose fibrous connective tissue (Image 1), cystic, mucinous (Image 2) and myxoid degeneration. Other changes seen were chondroid metaplasia, neovacularisation, hyalinization, hypercellularity and calcifications. Of these, loose fibrous tissue was the most common degenerative change seen. Knee score had a statistically significant association with the microscopic degenerative changes in both anterior and posterior cruciate ligaments (p value <0.05). The histological changes in cruciate ligaments also correlated with the presence of antero-posterior instability (p value <0.05), but there was no significant correlation with degree of flexion deformity, varus, medio-lateral instability or function score.

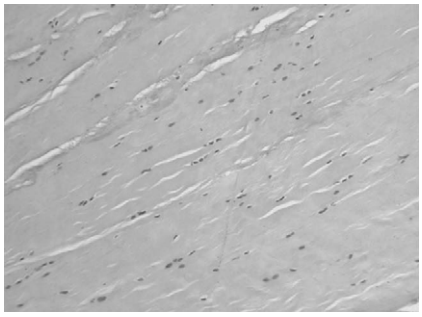

Image 1