

Annexin's role in Dupuytren's disease – identification of a novel biomarker involved in the apoptotic pathway

Hindocha S, Fartullah S, Stanley JK, McGrouther DA, Bayat A

Introduction

Dupuytren's disease (DD) is a benign fibro-proliferative disease albeit with tumour like properties. DD is thought to be an imbalance between apoptosis and proliferation of myofibroblasts implicated in its pathogenesis. Annexin's are part of a family of calcium dependent phospholipid binding proteins involved in the apoptotic process and have been shown to be over expressed in certain cancers. We hypothesise that profiling DD apoptotic cells will aid in the understanding of disease pathogenesis and recurrence.

Materials & Methods

DD in patients ($n=5$) with significant fixed flexion deformity were enrolled in this study. Biopsies were taken from the diseased cord, nodule, perinodular fat and skin overlying the nodule. Immunohistochemistry and QRT-PCR with Annexin 2, 5 and 11 were conducted. Tunnel assay was also carried out. Results were compared with external and internal controls.

Results

Annexin 2 and 11 were over expressed in DD cases in comparison to controls (RQ = 0.8 to 1). Annexin 5 was under expressed in diseased skin, fat, cord and nodule of diseased patients. The apoptosis profiling carried out showed a reduction in apoptosis in DD tissue compared to carpal tunnel control.

Conclusion

This study identifies a potentially significant biomarker profile in the development of DD which may help further understanding of the apoptotic pathway involved in DD aetiology. Further work will enable a better understanding of the cellular mechanisms involved in DD allowing developments of non-surgical therapy which may be used as an adjunct to surgery to reduce disease recurrence.