

P026 Immunolocalisation of matrix proteins in the Intervertebral Disc and Endplate in Scoliosis

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Introduction: The cartilage endplate, lying between the vertebrae and intervertebral discs in the spine, acts as the growth plate for vertebrae in humans. In scoliotic patients this region also undergoes ectopic calcification. We have examined surgical samples for the presence of matrix proteins associated with the calcification process in bone.

Methods: Collagen types I, II, and X, P-glycoprotein, osteopontin, osteonectin, and osteocalcin were immunolocalised in scoliotic intervertebral discs and endplates (n=19, aged 7-48 years).

Calcification and morphology were demonstrated with van Kossa and H&E stains, respectively.

Results & Discussion: Osteocalcin and osteonectin but not osteopontin were found in regions of ectopic calcification in the cartilage endplate whereas all 3 were found in bone. P-glycoprotein immunostained only in osteoid and some ectopically calcified endplates. Type I collagen was in bone and 2 samples with ectopic ossification, with the other cartilages being type II. Type X collagen was found in the hypertrophic growth plate and ~50% of regions of ectopic calcification. Scoliotic intervertebral discs provide an ideal model of both normal and pathological calcification processes, due to the presence of ectopic calcification in the cartilage endplate, which also acts as the vertebral growth plate.