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Mast Cells and Neuropeptides in Human Elbow Joint Capsules[2]

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The hypothesis is that mast cell numbers and neuropeptide containing nerve fibres are increased in the elbow joint anterior capsule of patients with post-traumatic contractures when compared to normal capsules. Capsules were obtained from 2 patients with contractures following radial head fractures and 2 organ donor elbows free of contractures. Double-labelling with specific antibodies to the mast cell marker chymase and the neuropeptide CGRP was used. The number of chymase positive mast cells was 6x greater in the contracture capsules when compared to normal capsules. In the contracture capsule, chymase positive mast cells represented 39% of total cells while in control capsules they represented 7% of total cells. The number of CGRP positive nerve fibres was increased 3x in the contracture capsule when compared to normal capsule. More subjects are needed to determine whether the mast cell and neuropeptide nerve fibre findings can be generalized to larger numbers.