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EXPERIMENTAL STUDY ON HEALING
OF MEDIAL PATELLAR DESMOTOMY IN COWS

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The aim of the present work was to obtain basic data on the clinical application of medial patellar desmotomy as a treatment for upward fixation of the patella in cattle. Gross and histological observations were made on the time-course of changes in medial patellar ligaments that were severed without post-operative suture from 7 to 201 days after operation in twenty-four normal cows. The following results were obtained :

1) After the medial patellar ligaments were severed, gait condition of cows did not show any visible changes.

2) From gross observations, the ends of the section that were distinct in the early stage became progressively indistinct in the middle and last stages. The area between the severed ends of the ligament contained rough connective tissue in the early stage, and dense connective tissue in the middle and last stages.

3) The length of the interval between the severed ends of the ligament was 18mm in the early stage, averaged 23 (range 11 to 33)mm in the middle stage, and 11 (range 7 to 17)mm in the last stage.

4) Length in the longitudinal direction of the regenerating ligament ranged from 0 to 0.5mm (average 0.3mm) in the early stage, 1.5 to 4.5mm (average 3.2mm) in the middle stage, and 3.8 to 4.5mm (average 4.1mm) in the last stage.

5) Density of cells that constituted regeneration tissue of the ligament from the severed end to the terminal end of regeneration tissue was lower in the terminal end of regeneration in the early stage, highest in parts proximal to the terminal end of regeneration in the middle stage, and uniform in the last stage. Cell nuclei that constituted regeneration tissue of the ligament were oval-shaped and the arrangement of cells did not conform to any particular directions in the early stage. In the middle and last stages, the shape of the nuclei changed gradually to long oval-shaped, and the cells were arranged in the longitudinal direction.