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Basic Study

Benefits of Ilizarov automated bone distraction for nerves and articular cartilage in experimental leg lengthening

Nathalia Shchudlo, Tatyana Varsegova, Tatyana Stupina, Michael Shchudlo, Marat Saifutdinov, Andrey Yemanov

Abstract

AIM: To determine peculiarities of tissue responses to manual and automated Ilizarov bone distraction in nerves and articular cartilage.

METHODS: 29 dogs were divided in two experimental groups: Group M - leg lengthening with manual distraction (1 mm/day in 4 steps), Group A - automated distraction (1 mm/day in 60 steps) and intact group. Animals were euthanized at the end of distraction, at 30-th day of fixation in apparatus and 30 days after the fixator removal.

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Mar 15, 2014 - **Ilizarov** was an innovator in the field of **limb lengthening** and published ... Using an **experimental** motorized distractor on dog tibiae, **Ilizarov** [2] studied the [10] showed histologic evidence of tibial **articular cartilage** damage in ... may show **anxiety** over use of wrenches on manual **distraction** struts and for ...

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The principle of callus **distraction** is the continuous, gradually increased ... During extremity lengthening the separated bone ends are gradually and ... Treatment of conditions involving the knee joint with the **Ilizarov** method 69 Stanitski DF: The effect of **limb lengthening** on **articular cartilage**: an **experimental** study.

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He also discovered that other tissues such as blood vessels, **nerves**, and ... From his **experiments**, **Ilizarov** concluded that the optimum rate of **distraction** is ... **limb lengthening** or for regenerating bone which has been removed due to ... enchondromas-benign masses of **cartilage** growing within bone, close to growth plate.

Missing: **articular**

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21 Mar 2012 ... The history of surgical **bone** lengthening comprises 100 exciting years ... until **Ilizarov** recognised the **benefits** of biological periosteum-preserving ... All current methods of gradual **leg lengthening** rely on **distraction** osteogenesis [25–29]. Physeal **cartilage** shows **experimental** histopathological changes ...

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To determine the optimal rhythm of **distraction** and level of osteotomy for maximal muscle preservation during **limb lengthening**, histologic and ... The main outcome was time to **bone** union, and potential **benefits** to soft tissue, e.g., ... [10] showed histologic evidence of tibial **articular cartilage** damage in rabbits that had ...