

痂,但主要是软骨性骨痂,只有同时给以生长激素和甲状腺素,才能使骨折愈合过程与对照组(未摘除垂体)同步,说明生长激素与甲状腺素在骨折愈合过程中有协同作用。Koskinen^[9]曾将生长激素和甲状腺素同时用于临床骨折患者,结果发现用药组病人能有更多骨痂形成,也较少发生骨折不愈合。Kumarasiri^[9]运用生化等技术手段证明甲状腺激素能调节生长激素细胞的基因表达及其生长。

本实验结果显示,煅狗骨既促进垂体TSH细胞功能,同时也促进GH细胞的功能,从而增加甲状腺功能,即促进甲状腺激素的分泌。通过甲状腺激素和生长激素的直接间接作用,刺激骨折断端成骨细胞、破骨细胞的活性,促进新生骨小梁形成,最终促进骨折的愈合。

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X线微机图像系统对损伤复元糖浆促进骨折后期骨痂生长情况的定量观察

南京市中医院(210001) 黄伯灵 庞俊 刘永年 周镗 刘道生 顾人娟

摘要: 本文作者将70例桡骨远端骨折患者分成损伤复元糖浆试验组与淀粉胶囊对照组,采用X线微机图像系统对患者骨折后第20天、30天、40天所摄X片,进行了骨痂生长、错位程度对骨痂的影响,骨折后继发性骨质疏松情况的定量分析,证实该中药有明显加速骨折愈合的作用,其原理可能与加速机体对骨折端的钙转运有关。

关键词: 中药 骨折愈合 骨痂 X线微机图像系统 实验研究

损伤复元糖浆是我院伤骨科名老中医余靖正祖传接骨验方,已治愈各类骨折患者数万例,疗效显著。为观察该方剂对促进骨折愈合

的确凿疗效,我们采用X线微机图像系统对试验与对照组患者临床治疗中后期的骨痂生长情况进行了定量分析,结果如下。

临床资料

70例患者中，桡骨远端骨折66例，其中伴尺骨茎突骨折46例；参照Older^[1]骨折分型，I型16例，II型26例，III型21例，IV型3例；男6例，女60例；男性年龄最低28岁，最高58岁，平均42.8岁，女性年龄最低34岁，最高80岁，平均59.2岁；左手35例，右手31例。儿童桡骨远端骨折及尺桡骨远端双骨折4例，全部男性，左右手各2例。

试验分组及治疗方法：患者就诊后，立即拍摄腕关节正侧位X线片。错位者，手法整复复位。外敷活血药膏，小夹板固定后查尿糖、血色素，合格者按性别、年龄（每对差别不超过6岁），骨折证型，错位及骨折线情况，整复后情况，就诊顺序，随机配对分为试验与对照两组。

两组患者骨折后前10天均外敷我院伤骨科协定处方活血药膏，该药膏由土鳖虫、虎杖、黄柏等7味中药组成，5天更换一次。10天后均不再敷活血膏。试验组，按中医治疗骨折三期分治的原则，前10天内服市售中成药云南白药，每日两次，每次0.5g；10天后则开始服用损伤复元糖浆（由丹参、补骨脂、骨碎补等21味中药组成），每日二次，每次20ml。对照组，则自骨折第1天至40天，均服用淀粉胶囊（每粒胶囊含食用淀粉0.5g）。每日两次，每次两粒。

观察方法：两组病人均在骨折后第10、20、30天以及解除夹板固定的第40天，使用同一机器，同一批号胶片，统一曝光条件并尽可能统一冲洗条件下拍摄标准腕关节正侧位片。采用X线微机图像系统，配用“BMAS”软件包对所拍摄的全部X线片进行归一化处理，并去除软组织阴影灰度后进行骨痂生长及继发性骨质疏松情况的定量分析。

X线微机图像系统由摄像机、图像板、微机共同组成，能对不同曝光、冲洗条件下所摄的X片进行划一处理，并消除四肢肌肉厚薄不等对图像灰度的影响，给出骨痂生长情况的精确的定量百分数及骨矿物质密度，测量精度±3%。定量观察指标主要有：骨痂生长中的骨质灰度比测量，骨矿物质密度比测量，继发性骨质疏松中的骨矿物质密度比测量。

全部观察测量结果输入微机，使用美国MG111统计学处理软件包进行显著性检验。

观察结果

1. 试验组与对照组配对条件可比性检测：包括年龄、性别、血色素、就诊时间、桡骨远端骨折数、伴尺骨茎突骨折人数、分型、及儿童桡骨远端骨折及尺桡骨远端双骨折人数八个项目。经统计学处理，两组配对情况无显著差异（ $P > 0.05$ ），确具可比性。

2. 骨痂生长情况观察：结果见表1。

表1 骨折后第20、30、40天时试验组与对照组骨痂增长情况比较(%)

	骨 灰 度 比			骨 矿 密 度 比		
	20天	30天	40天	20天	30天	40天
试验组	5.03±4.46	11.48±6.12	16.27±5.95	5.48±4.63	11.24±6.43	15.44±6.77
对照组	5.23±5.30	10.28±6.52	11.43±6.69	4.69±4.82	9.13±5.96	10.20±6.10
	$P > 0.05$	$P > 0.05$	$P < 0.01$	$P > 0.05$	$P > 0.05$	$P < 0.01$

3. 骨折错位程度与骨痂生长速度观察

我们选择了年龄基本相近的Older I型与II型女性患者26例（其中试验组与对照组各半）进行了小夹板固定40天后骨折错位程度与骨痂生长速度的观察，结果见表2。

4. 桡骨茎突周缘骨矿物质密度比下降情况：

两组患者均采用小夹板固定40天，其桡骨

茎突周缘最易发生骨质疏松区骨矿物质比下降情况，见表3。

讨 论

1. 为研究中药促进骨折愈合、骨痂生长，对患者骨折后骨痂生长情况能进行准确的定量分析，我们严格控制影响骨折愈合的因素，如骨折部位，类型，轻重程度，就诊时间，年龄性别以做到有可比性，以期得出确凿的结论。

表2 骨折40天Older I型与II型骨痂生长速度比较

	试 验 组		对 照 组	
	骨灰度比	骨矿密度比	骨灰度比	骨矿密度比
Older I型(6例)	18.1±6.7	16.0±5.49	11.46±4.93	13.09±4.05
Older II型(7例)	16.9±6.0	16.34±5.47	12.59±7.34	13.19±8.87
	P>0.5	P>0.5	P>0.5	P>0.5

表3 骨折固定20、30、40天时继发性骨质疏松骨矿物质密度比下降情况(%)

	20天	30天	40天
试验组	-5.47±5.08	-10.41±8.68	-14.46±7.67
对照组	-2.83±10.88	-6.55±8.30	-10.34±12.06
	P>0.05	P>0.05	P>0.05

本研究严格选择受试对象,随机配对的方法治疗70例35对桡骨远端骨折患者。观察结果显示:骨折后第30、40天时,不论骨灰度比或骨矿密度比、增长均数均以损伤复元糖浆组为高;骨折后第40天上述两项观察指标,损伤复元糖浆组与对照组相比均有高度显著性差异($P<0.01$)。证明采用损伤复元糖浆治疗骨折,确实具有明显的促进桡骨远端骨折骨痂生长的作用。

2.骨折后错位情况与骨痂生长速度是否成正比,该问题一直是促进骨折愈合研究中的重要问题。本研究观察结果显示:在年龄基本近似的Older I型、II型26例女性患者中,不论试验

组或对照组,两型骨折错位程度虽有一定差异,但骨痂生长速度并无明显差别(均 $P>0.05$)。究其原因,可能因桡骨远端骨折系松质骨骨折,外骨痂生长量相对较一般四肢骨干骨折偏少的缘故,在四肢骨干骨折时,是否仍会出现同样结论,尚有待今后继续观察。

3.通过观察测量还发现:桡骨茎突周缘(最易发生骨质疏松区)的骨矿物质密度比随骨折固定日期的增长而逐步下降,两组患者相比经统计学处理虽无显著性差异($P>0.05$),但骨折固定后20、30、40天时观察,骨矿密度比下降均数反以损伤复元糖浆组为高,且与骨痂增长值成正比,故推测试验组患者骨矿密度比下降均数偏高可能与使用中药后钙的转运能力增强有关。

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Abstracts of Original Articles

A cellular immunocytochemical study on pituitary TSH and GH during experimental healing process treated with calcined dog bone

Lin Yan-Ping(林燕萍)et al

Fujian College of Traditional Chinese Medicine(350003)

For determination of the cellular structural and functional changes of the anterior lobe of pituitary thyroid stimulating hormone and growth hormone during the course of promoting fracture healing ability of calcined dog bone, fifty four rabbits were selected to make models of standard fracture of bilateral radius. They were divided into calcined dog bone treating group and control group. Materials were taken for every week postoperatively. The pituitary glands were prepared with paraffin embedding and sections as routinely and stained with immunocytochemical method. The results showed that in control group after fracture, there were decreasing of amount of pituitary TSH and GH cells. There was no such inhibitory changes in the calcined dog bone group. The amount of TSH cellular maintained within a rather high level. Especially the GH cells were elevated in a large scale along with prolongation of the course postoperatively. So it indicates that the calcined dog bone bears the action of promoting the function of pituitary TSH and GH cells and facilitates bone healing.

Key words Calcined dog bone Bone healing

Thyroid stimulating hormone Growth hormone

Experimental study

(original article on page 5)

A quantitative measurement of late stage callus growing treated with Sun Shang Fu Yuan Tang Jiang With X-ray micro-computer figure system

Huang Bo-ling(黄伯灵)et al

Nanjing Hospital of Traditional Chinese Medicine(210001)

Seventy cases of distal end fracture of the radius were divided into Sun Shang Fu Yuan Tang Jiang (experimental) group and starch capsule control group. X ray films were taken for 20th, 30th and 40th day after fracture of the patients with X-ray microcomputer figure system. Quantitative measurements were made with callus growing, degree of displacement which influenced callus formation and quantitative analysis of secondary osteoporosis after fracture. It is proved that this Chinese herb has prominent action in accelerating bone healing. The mechanism may be due to acceleration of calcium transportation between fractured ends.

Key words Chinese herbs Fracture healing Callus

X ray micro-computer figure system

Experimental study

(original article on page 7)

Seventy eight cases of cervical spondylosis treated by medicinal pillow

Zhu Fang-shou(诸方受)et al

Jiangsu Province Hospital of Traditional Chinese Medicine(210029)

In this article, medicinal pillow, Tuina and medicine therapy served as observed group, Tuina and medicine therapy as control group. Seventy eight cases of cervical spondylotic patients were observed. The effective rate of medicinal pillow group was 97.56%, and with that of the control group being 83.78%. The therapeutic course of the observed group was shorter than that of the control group. It indicates that the medicinal pillow has the action in helping the recovery of the physiological curve of cervical spine. It can be served as a therapeutic treatment of cervical spondylosis.

Key words Cervical spondylosis Tuina therapy

Chinese medicinal therapy

Medicinal pillow Therapeutic application

(Original article on page 10)

Fracture of femoral neck treated with percutaneous pressor screw

Liu An-qing(刘安庆)et al

Second Affiliated Hospital of Xian University of Medical Science 710004)

In this article, fifty six cases of fracture of femoral neck were treated with percutaneous pressor screw, the rate of excellent and good was 73%, the rate of non-union, 9%; rate of aseptic necrosis of the femoral head was 17%. The characteristics of the method are small incision, simple to be manipulated. An improving method in taking X ray film of the femoral neck from lateral view was introduced.

Key words Fracture of femoral neck Fracture fixation

(Original article on page 12)

Thirty cases of central type of protrusion of lumbar intervertebral disc treated by mild Tuina under nerve root block anesthesia

Zhou Lin-kuan(周林宽)et al)

Zhejiang College of Traditional Chinese Medicine(310009)

In this article, thirty cases of central and para-central type of protrusion of lumbar intrvertebral disc were treated with mild Tuina under nerve root block anesthesia. The results were cure in 6 cases; marked effectiveness, 9; effectiveness, 6; ineffectiveness, 9; with an effective rate of 70%.

Key words Protrusion of lumbar intervertebral disc Tuina therapy

(Original article on page 24)