

照组与理疗组相比 $P < 0.001$, 表明中药离子导入治疗后, 实验动物髓区的骨密度有了非常明显的回升。对照组与擦药组相比 $P < 0.05$, 表明单纯外擦中药, 而不做透入时, 动物髓区的骨密度没有明显的回升。理疗组与中药对照组相比 $P < 0.005$, 表明离子透入法的疗效要明显地优于口服马氏骨丸的疗效。

但是应当指出, 由于各组实验动物数量较少, 对 t 检验结果的可靠性会有一些影响。

讨 论

1. 一些文献报道: 醋酸氢化考地松可以造成家兔股骨头坏死, 而我们的实验表明, 在文献报道的用药条件下, 实验家兔髓区骨密度明显降低, 这表明骨密度降低是早期股骨头坏死的一个指标。

2. 用中药离子透入法, 治疗股骨头坏死的

家兔 5 周后可使降低的骨密度明显地提高, 这主要由于药物直接导入需治疗的部位, 特别是表层的病灶处, 集中了较高的浓度, 药物导入所形成的储藏能量逐渐消散而进入淋巴液和血液, 使骨密度大幅度地回升。

3. 股骨头坏死的患者髓痛, 是由于多种原因造成的, 其中骨质破坏与骨质疏松有关, 临床用中药离子导入法治疗股骨头坏死病例, 有显著的止痛效果, 主要中药有祛风湿, 舒筋活络, 补肝益肾, 散热止痛的作用, 用中药导入与平流电作用, 抑制了骨质的破坏与吸收, 激动了局部组织的修复再生反应, 并改变了局部的血液动力学, 这些均有利于病变的恢复, 与骨密度增高的结果有关。

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兔肩周炎的模型复制及相关生物化学指标测定

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摘要 作者采用持续劳损加冰敷复制兔肩周炎模型并对其进行相关生物化学指标测定。结果显示, 兔患肩肌腱组织中羟脯氨酸、DNA、蛋白质持续高于健侧, 分别有显著差异、极其显著差异。结果说明复制的模型与人类肩周炎的病理变化相似。作者认为模型的复制方法与人类肩周炎的病因比较一致。

关键词 动物实验 兔 肩周炎

关于肩关节周围炎(以下简称肩周炎)动物模型的研究, 直到目前为止极少有人涉足。我们采用持续机械劳损加冰敷复制兔肩周炎, 并进行了相关生物化学指标测定, 现报告于下。

模型复制

选择 4~6 月的健康家兔 30 只, 雌雄不分, 体重 $2.5 \pm 0.5 \text{kg}$ 。取右侧肩部外侧以 Na_2S 脱毛, 脱毛面积 $7 \times 7 \text{cm}^2$ 。家兔仰卧, 后肢与左前肢固定于兔台, 右侧前肢上臂与 WHE-80 电动振荡器(国营东台粮油机械厂制造)固定连接。以 280 次/分频率、1.5cm 震幅平行摇动肩关节, 每天持续 8 小时, 连续 3 天; 然后将其

仰卧固定于兔笼上, 将塑料袋以水浸湿后装冰块(每块 $3 \times 3 \times 1.5 \text{cm}^3$, 每袋每次装 4 块)外敷家兔右肩部, 当冰块融化将尽, 及时更换, 每天持续 8 小时, 连续 3 天。

相关生物化学指标测定

1. 测定材料

(1) 待测标本 于造模后 30 天模兔处死后, 取健、患侧肱二头长肌腱, 用组织剪细心剥离其上附着的腱周组织, 每条肌腱均在同一部位取材 2 小块, 称湿重后, 立即放入 5 倍体积的冰蒸馏水中孕洗 12 小时。一块组织用于羟脯氨酸测定, 另一块用于 DNA 和蛋白质测定。

(2) 实验试剂和仪器

①羟脯氨酸标准应用液：将羟脯氨酸标准品 (Sigmam 公司生产, 批号 H-600Z) 置于干燥器中, 使其恒重, 准确称取 100mg, 用 0.01N 盐酸溶解后, 用蒸馏水稀释, 使该液在每 ml 含羟脯氨酸 10ug, 置 4℃ 冰箱保存。

②柠檬酸缓冲液：取柠檬酸 50g (日本进口, 上海化学试剂站分装; 批号 89-08-17), 结晶醋酸钠 120mg (河南焦作市化工三厂, 批号 GB643-88), 氢氧化钠 34mg, 用蒸馏水 800ml 溶解, 加冰醋酸 12ml, 调 PH6.0, 用蒸馏水稀释至 1000ml。

③0.05M 氯胺-T 溶液：取氯胺-T (美国进口, 上海化学试剂站分装, 批号 890108) 1.41mg 以少量甲醇溶液溶解, 然后用甲醇稀释至 100ml。

④3.15M 过氯酸溶液：取 70% 过氯酸 (天津化学试剂一厂, 批号 880814) 27ml, 以蒸馏水稀释至 100ml。

⑤10% 对二甲氨基苯甲醛 (P-DMAB) 溶液：取 P-DMAB (北京化工厂生产, 批号 880428) 10mg 以甲醇溶解后, 稀释至 100ml。

⑥50% 三氯乙酸：将三氯乙酸 (沈阳化玻站经销, 批号 870428) 以蒸馏水配成 50% 溶液。

⑦鱼精 DNA (日本进口, 上海生物制品所分装)。

⑧结晶牛血清白蛋白溶液：将结晶牛血清白蛋白 (上海生物制品所), 以 0.5M 氢氧化钠稀释成 10ug/ml 溶液。

⑨72 型分光光度仪 (上海第二分析仪器厂制造)。

⑩紫外分光光度仪 (日本产, HITACHI200-20 型)。

2. 测定方法

(1) 模兔肌腱组织中羟脯氨酸含量测定

取经冰蒸馏水中孕洗的肌腱组织按 1:1 量加入 0.5ml/L 乙酸, 在组织匀浆器中匀浆。一般连续研磨 1.5~2.5h, 使肌腱组织呈棉絮状。向腱组织匀浆中加入 15 体积的 0.5ml/L 乙酸, 于 4℃ 下放置 48h, 置高速离心机 (12000 转/

分) 中离心 20 分钟, 取上清液, 向上清液中加入 NaCl, 使其浓度达到 5%, 充分沉淀后, 以 3000 转/分离心, 按沉淀酸水解法进行测定, 即使标本加入 6N 盐酸, 浓度达 25%, 混匀, 加在 124℃ 烤箱中水解 2h, 加入 10N NaOH, 调 PH 至 7.0, 加等量蒸馏水稀释, 过滤, 取滤液加入样品管中, 标准管加入羟脯氨酸标准应用液、空白管加入蒸馏水。然后按要求每管分别加入柠檬酸缓冲液, 0.05M 氯胺-T 混匀, 充分氧化 6 分钟, 再加 3.15M 过氯酸溶液混匀, 以中止氧化 5 分钟, 再加入 10% P-DMAB 100℃ 水浴 2 分钟, 冰水冷却。空白管调零, 在 721 分光光度仪 562nm 比色, 其光密度值按以下公式计算。

$$\text{羟脯氨酸含量 (ug/mg)} = \frac{1/3 \cdot \text{稀释倍数}}{\text{肌腱组织湿重 (mg/ml)}}$$

(2) 模兔肌腱组织中 DNA 含量测定 将冰蒸馏水孕洗的肌腱组织取出, 置入组织匀浆器中, 加入 0.05M 柠檬酸钠 0.5ml, 再加 0.1M NaCl 调 PH 为 7.0, 充分匀浆, 3000 转/分离心, 然后再用蒸馏水洗涤沉淀 3 次。再向沉淀物加入 50% 三氯乙酸 3ml, 充分混匀后离心, 取沉淀加入 3ml 氯仿-甲醇 (3:1), 离心后向沉淀物中再加入 50% 三氯乙酸 3ml, 在电炉上加温至 90℃, 然后离心 15 分钟, 取上清液按紫外吸收法测定。选用光程为 1cm 的石英比色杯, 在 260 毫微米波下测其光密度值 (DNA 在 260nm 处有最大吸收峰) 根据以下公式计算每 mg 组织中 DNA (ug) 含量。

$$\text{DNA (ug/mg)} = \frac{0.02 \times 2}{\text{肌腱组织含量 (mg/ml)}} \times \text{稀释液倍数 (ug/ml)}$$

(3) 模兔肌腱组织中蛋白质含量测定 取 DNA 测定剩下的沉淀物, 加入 0.5N NaOH 5ml, 充分溶解后, 根据蛋白质在 280nm 处为最大吸收峰, 用紫外吸收法测定, 标准管用结晶牛血清白蛋白溶液。比色杯选用

光程为 1cm 的石英杯, 其光密度值根据以下公式计算每克肌腱组织中蛋白质的含量 (ug)。

$$\text{蛋白质含量 (ug/mg)} = 1.45 \text{ O. D}_{280} - 0.74 \text{ O. D}_{260}$$

注: 式中 O. D₂₈₀ 是蛋白质溶液在 280nm 下测得的光密度值, O. D₂₆₀ 是蛋白质溶液在 260nm 下测得的光密度值。

3. 测定结果

造模后 30 天模兔健侧相关生物化学指标测定 ($\bar{X} \pm \text{SD}$ ug/mg 肌腱组织)

	羟脯氨酸	DNA	蛋白质
患侧	25.83 ± 3.67**	3.39 ± 0.36*	121.77 ± 23.11***
健侧	19.26 ± 1.24	2.64 ± 0.22	85.22 ± 6.93

注: 与健侧比较 * P < 0.05 ** P < 0.01 *** P < 0.001

由表中可见, 患侧肩部肌腱组织中羟脯氨酸, DNA 和蛋白质含量均高于健侧, 分别有显著差异、极显著差异和极其显著差异。

讨 论

肩周炎的确切病因至今尚不完全清楚。《古今医鉴》指出本病“为风寒湿所致”, 因此有人采用冷风吹复制兔肩周炎模型^[1]。纵观中医历代文献, 许多医家认为本病是由于肩部阳气不足, 气血凝滞, 血不荣筋, 风寒湿侵袭所致。近 10 多年来, 国内外均有研究说明本病发生与肩关节的生物力学特点关系十分密切。肩周炎不只是由外邪引起。人类肩关节活动范围大, 稳定性差, 长年累月频繁的前屈上举和外展上举活动使肱二头肌腱、冈上肌腱、关节囊和肩峰

下滑囊等组织容易受到磨损, 关节及周围的软组织抵抗力下降。在这种情况下, 再感受风寒湿, 则容易发病。简而言之, 退变劳损是内因, 风寒湿侵袭是外因。采用持续劳损加冰敷复制模型与人类肩周炎的病因学比较一致。

随着关节造影、关节镜检查和对本病手术治疗的开展, 可以直接观察其病理变化。患病肩关节及其周围的肌肉、肌腱、韧带和滑囊等组织可发生无菌性炎症, 肉眼观察可见变性、断裂、肥厚、机化与粘连。我们在模兔不同时期的病理组织形态学观察中见到患肩软组织充血、肿胀, 肌纤维断裂, 毛细血管内红细胞瘀积, 纤维素渗出, 大量白细胞浸润、肌浆匀染玻璃样变, 肌纤维退行性变, 肌间质中渗出纤维素机化, 结缔组织增生, 滑膜粘连进行性加重。这些改变与人类肩周炎的病理变化颇为一致。我们通过测定相关生物化学指标发现模兔肱二头肌腱组织中羟脯氨酸、DNA 和蛋白质明显持续高于健侧, 羟脯氨酸、DNA 和蛋白质是参与胶原疤痕形成的主要物质, 这就说明造模肩部组织中持续存在着机化, 说明本文方法复制的兔肩周炎有着与人类肩周炎相似的病理变化。

临床实践证明手法可以松解粘连, 是治疗肩周炎的一种有效方法。对模兔肩部组织中羟脯氨酸、DNA 和蛋白质的测定结果为手法治疗肩周炎提供了一种实验依据。

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为弘扬祖国医学, 培养新型专业技术人才, 本院以下专业继续面向全国招生: 1. 中医专业和中西医结合专业: 选用全国高等院校函授教材, 各科均由专家教授执教、辅导。参加高等教育中医专业自学考试及格, 国家承认其大专学历。2. 性医学与不孕症专业: 学习国内外性医学精华, 并以我国第一部彩色性病图谱指导临床和教学, 它以数百幅国内外罕见的性病图像向您展示中国半个世纪以来的精藏珍品。3. 针灸推拿骨伤专业: 以其独特的疗效, 成为世界热门。教材博采众家手法技巧精华, 医理精深、价值极高, 且图像明了, 易懂易学易用。后两专业学制一年, 发钢印结业证。详见简章, 汇报名费 5 元即寄。来函请寄 200085 上海 085-314 信箱上海市清华科技函授学院 韩宇虹收 电话: (021) 58554512

English Abstract

Clinical study of non-operative treatment of lumbar disc herniation Jin Liaosha et al
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In this article, the method of treating the lumbar disc herniation by manipulation under general anesthesia in 469 cases were introduced. The result of CT scanning, SEP and vessel B ultrasound before and after treatment in 59 cases were observed and compared. Through the study, a new point of view was suggested in the mechanism of manipulation. The manipulation did not reduce or rupture the prolapsed disc. But it can gain an active treatment by affecting the deep tissue, changing the blood circulation around the protruded mass, loosening the adhesion between the compressed nerve root and surrounding tissue.

Key words Lumbar disc herniation Tuina

(Original article page 3)

Study on 3-D movement of whole lumbar spine in rotatory chiropractic

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For the purpose of observing 3-D movement of the whole lumbar spine in rotatory chiropractic, the experimental specimen from segmental lumbar movement was changed to L1—L5 whole lumbar spine, thereby a parallel spinal 3-D movement measurement system was designed by the authors. The loading method was reformed so as to improve imitation of the chiropractic maneuver of the spine. Seven definite lumbar spinal points were set and the image developments so observed over these points were inputted into the computer system. Calculation of the quantitative 3-D movement in imitation chiropractic loading of the lumbar spine and its

posterior elements was made by rigidity transform mathematic theory of the mechanics of engineering system. According to the result of 3-D movement of whole lumbar spine in right rotation, we found the rotatory chiropractic applied on left lying position. the right facet joint process that constituted the inner wall of nerve root canal developed directional displacement. Although it may be different in separate individual segment, the displacement in the main movement axis could directly enlarge the nerve root canal, or drawing and tightening the capsule ligament of facet joint and ligament flavium in order to enlarge the nerve root canal.

Key words Lumbar spine 3-D movement Manipulation

(Original article page 5)

Effect of Bushen Jiangu Tang on oxygen free radical metabolism of patients with osteoarthritis of knee joint

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Fifty eight cases of osteoarthritis (OA) of knee joint were treated by oral taken Bushen Jiangu Tang (BSJGT). Before and after treatment the observation of oxygen free radical metabolism have been taken through the activity of superoxide dismutase (SOD) of RBC and the content of lipid peroxide (LPO) of serum. The results showed that before treatment SOD activity decreased significantly and LPO content increased markedly in patients with OA than that in controls ($P < 0.01$). After treatment with BSJGT by oral administration parameter of SOD and LPO had been shown relevant improvement in the remission patients and that in the obvious effective cases returned to normal ($P > 0.05$) and that in ineffective cases remained abnormal ($P < 0.01$). This preliminary study suggested that

oxygen free radical might take part in the pathological process of OA and one of therapeutic mechanism of BSJGT is probably due to improving metabolic disorder of the oxygen free radical in patients with OA of knee joint.

Key words Bushen Jiangu Tang Osteoarthritis
Superoxide dismutase Lipid peroxide
Oxygen free radical

(Original article page 8)

Reconstructed model and biochemical indices of peri-arthritis humeroscapularis of rabbits

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In this study, a model of peri-arthritis humeroscapularis in rabbits was established by constant mechanical strain and application of ice bag, and biochemical indices related to the model was measured. It shows that the level of hyperoxyproline, DNA and protein to the perimental tendon is higher than that of the normal, and all have apparent difference. It indicates that the model is similar to human peri-arthritis humeroscapularis. The authors think that the method is approximate to the cause of human peri-arthritis humeroscapularis.

Key words Animal experiment Rabbit Peri-arthritis humeroscapularis

(original article Page 10)

Therapeutic effect of manipulation in the treatment of cervical arrhythmia

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Arrhythmia is a common syndrome, some patients can't turn to normal after taking various drugs. We used manoreduction of revolving cervical vertebrae and knee pressing thoracic vertebrae in accompany with hands pressing shoulder to correct anatomic displacement of cervical and thoracic vertebrae, which removed stimulation to cervical and thoracic sympathetic ganglia, restored the function of vegetative nervous system,

recovered arrhythmia and brought satisfactory result, therefore we called this kind of arrhythmia as cervical arrhythmia. From January 1984 to December 1993, 89 cases were observed, with 22 cases recovered; 47 marked improved, 17 improved, and 3 ineffective. The total effective rate was 96.6%. The results remained now—a—days, especially the recovery cases. The reasons for it are reposition of anatomic displacement, persistent cervical exercise by the patients themselves and alteration of their improper living habits (such as using high pillow and swinging head inadvertently).

Key words Manipulation Arrhythmia Deviation of spinous process

(Original article page 14)

Anterior dislocation of shoulder with fracture of humeral neck treated by close reduction

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Anterior dislocation of shoulder with fracture of humeral neck is rare and severe injury. The cases in which treated successfully by close reduction were minor in the literature. In this paper 10 cases are reported. Among them, 8 cases are treated successfully by close reduction and the results are satisfaction. Based on the analysis of the mechanism, traumatic anatomy and in the operative findings, the author realizes that the key to successful close reduction is to reopen the original pathway of dislocation, thus humeral head is reduced easily from the pathway. Traction, if applied, would certainly shut up the pathway and render reduction more difficulty. Contrary to general opinion, successful close reduction can be accomplished without the use of any traction. The functional recovery of all cases in which dislocation had been reduced by close reduction were good and excellent.

Key words Anterior dislocation of shoulder Fracture of humeral neck Close reduction

(Original article page 39)