

试论肾主骨的研究

西安铁路分局西安医院 张超然

自《黄帝内经》提出肾主骨后,⁽¹⁾一直被后世医家所沿用,但是肾与骨的关系究竟如何?则甚少有系统研究者。通过学习祖国医学,结合临床实践体会,对“肾主骨”这个具有高度概括性的中医理论问题,以中西医结合的临床研究为依据,谈谈肤浅的认识。

肾的功能

根据中医文献的记载,肾的功能与现代医学的肾脏功能的概念不尽相同,其中一部分确系现今肾脏的功能,但有一部分超出了现代医学肾脏功能的范畴,至少包括肾上腺的功能,甚至其他许多内分泌腺的功能。古人认为肾的功能有:主骨、主耳、主生长、主生殖、主藏精、主水液、荣发、藏志、生骨髓、司二便和出技巧等,肾气的盛衰与人的生、老、病、死有密切的关系,因而推肾于诸脏之上,具有主宰生命的作用。肾如何主骨?肾与骨有什么关系?在祖国医籍中论述较少。《黄帝内经》仅有“女子七岁肾气盛,……四七筋骨坚,……丈夫八岁肾气实,……三八肾气平均,筋骨劲强,……四八,筋骨隆盛,……”⁽²⁾、“肾痹者,善胀,尻以代踵,脊以代头”⁽³⁾、“肾气热,则腰脊不举,骨枯而髓减,发为骨痿。”⁽⁴⁾等少数片断记载,后世亦无系统讨论者。

肾疾患可导致骨病

从胚胎学的角度看,肾与骨虽都是来自中胚叶,但这种同源关系,并没有直接显示出更多的相互关系。

骨是一个不断进行新陈代谢的活组织,它含有多种酶,它的生理功能受一些内分泌腺特别是甲状旁腺的调节,机体的许多病理变化都会直接或间接地影响骨的正常代谢,例如垂体、性腺、甲状腺、肾上腺、胰腺、肾疾患以及外伤等,都可以对骨发生影响。其中肾功能障碍所致之骨疾患显示了“肾主骨”的直接关系。如尿毒症一类中毒的肾脏疾患,若持续时间较长,(一般两年以上)将会引起所谓尿毒症性骨结构不良,包括骨质软化症、纤维性骨炎和骨质硬化症;先天性肾血管疾患可以引起肾血管性佝偻病和 Fanconi

氏症候群;柯兴氏综合征会发生不同程度的骨质疏松;肾小管性酸中毒可因血钙过低而出现骨质软化症;某些疾病可引起肾小管对钙的回吸收减少,钙从尿中大量丢失,也会形成骨质疏松。此外还有不少疾病通过肾脏间接影响骨骼,这种情况在现代医学上不包括在肾的范围,但在中医仍为肾的作用,如垂体性侏儒症时,可出现骨骼发育不全,骨骼短小、性器官不发育和第二性征缺乏,祖国医学则认为是先天不足所致,而先天之本在肾。这些论述证实了肾与骨的关系是密切的,肾疾患可导致骨病。

骨疾患可导致肾病

许多骨疾患可以波及肾,影响肾的正常功能,甚至导致肾疾患的发生。例如骨折病人长期卧床,尿中钙排出量较正常增高,形成肾结石的机会增多;当人体受到外伤时(包括骨折在内)可以引起一系列的反映,正如祖国医学所谓的“且肢体损于外,则气血伤于内,营卫有所不贯,脏腑由之不和……”⁽⁵⁾,现代医学同样认为这种损伤后的反应极为复杂,主要通过垂体——肾上腺和其他一些内分泌的变化表现出来;仅肾上腺而论,损伤之后,其皮质内的脂类、胆固醇和维生素C的含量大为降低,皮质显示活跃,损伤后的负氮平衡将持续2~6周之久,而氮的代谢,一般是受肾上腺皮质控制的;损伤后的血糖迅速上升,体内钠和氯的潴留也受肾上腺的影响;严重损伤可使肝肾缺血。此外,类风湿性关节炎、慢性骨髓炎和骨髓瘤等,又为肾脏淀粉样变的最常见的诱发因素。这些说明了骨对肾的影响,骨疾患可导致肾病。

从补肾治疗骨病看肾主骨

临床运用肾主骨的理论,从补肾着手治疗跌打损伤和一些骨科疾患,取得了良好的效果,又从临床角度证实了肾主骨的理论是有其一定科学性的。例如骨质增生,我们认为是全身退行性变在骨骼系统的表现,源于肾气衰弱,从而采用补肾的方法治疗增生性脊椎炎、跟骨骨刺和肾虚型的颈椎病等大多能使症状缓解,个别病例坚持长期治疗,有骨刺消失者。又在

骨折治疗的后期,补益肝肾法(又名强壮筋骨法)已成为国内公认的治疗法则之一而编入教材。^[6]

锅巴盐是陕西省富平县境内卤泊滩出产的一种食盐,用滩中之水熬制而成,含有30余种无机盐元素。前人发现锅巴盐能治大骨节病和地方性甲状腺肿,谚语云:“北山吃了不拐腿,南山吃了不长瘦。”(陕西关中之北部山区多大骨节病,南侧山区多地方性甲状腺肿。)解放后,陕西省地方病研究所对锅巴盐进行了多方面的研究,在防治地方性甲状腺肿和大骨节病方面取得了显著的疗效。我们将锅巴盐用于骨和关节疾患的治疗,效果满意,并做了一部分实验室研究。51例病人服用锅巴盐前24小时尿—17酮类固醇总量为345.63 mg%,平均值为 6.78 ± 0.34 mg%,服用锅巴盐治疗后17酮类固醇总量为423.15 mg%,平均值为 8.29 ± 0.43 mg%, $P < 0.05$ 。表明锅巴盐治疗骨与关节疾病的药理作用之一在于能提高肾上腺皮质功能,符合盐能补肾的理论。用补肾的方法治愈骨骼系统的疾患,也说明了“肾主骨”的科学性。

从大骨节病发病因素看肾主骨

我们曾在陕西省××县××公社进行大骨节病防治工作,该公社全部为山区,人口6,663人,共发现大骨节病患者1,514人,在调查与防治过程中,发现以下几个值得注意的问题:

1.当地籍和外籍(非病区籍贯)青少年及儿童的发病率有显著差异:20岁以下外籍青少年及儿童共914人,其中有大骨节病患者184人,发病率为20.1%;当地籍同年龄青少年及儿童共919人,其中有大骨节病患者303人,发病率为32.9%, $P < 0.05$ 。外籍者不仅发病率低而且病情也较轻。

2.当地出生的外籍青少年及儿童发病率仍低,病情也较轻:为了排除外籍青少年及儿童在病区居住时间较短而发病率低因素,我们又对207例出生在病区生长在病区的20岁以下的外籍青少年及儿童进行了调查对比,207人中有大骨节病患者42人,发病率为20.2%,其发病率和病情均与前者相近,仍然比当地籍者为低。

3.当地籍大骨节病患者的子女和当地籍非大骨节病患者的子女的发病率有显著差异:为了进一步证明大骨节病的发病和先天禀赋之间的关系,我们调查了52户非大骨节病患者的子女124人,其中有大骨节病患者32人,发病率为25.8%;41户大骨节病患者的子女96人中有大骨节病患者38人,发病率为39.5%,病情也较前者为重, $P < 0.05$ 。

4.病区有任姓一户,同胞兄弟二人,自幼务农,均为III度大骨节病患者,二人之妻同龄俱健,同锅吃饭,生活条件完全相同,其兄有子女四人,一子患潜在型克山病,一子因病已故,两个女儿均系II度大骨节病患者;其弟亦有子女四人,仅一子患前驱期大骨节病;两个小家庭除其兄另患有地方性甲状腺肿外,未找到其他差别。

以上说明大骨节病的病因,不能单纯用水土学说来解释,因为生活在病区的人并非全部发病,外籍青少年及儿童尽管出生在病区,生长在病区,其发病率比当地籍青少年及儿童明显降低,病情较轻;患者的子女发病率高和任姓一家的典型事例都说明了先天禀赋在大骨节病发病方面的重要性。据报道,在西安市和兰田县等非大骨节病病区也发现了典型的大骨节病例^[7],国内发现大骨节病的最早发病年龄为18个月^[8],这些病人的发病,显然和水土没有直接关系。可以认为大骨节病的发病和先天禀赋不足有密切的关系,而先天之本为肾,肾与骨的关系岂不更加昭然。

肾主骨研究的前景

19世纪初Bright•R对肾疾病的肾外效应问题已有研究;肾脏对维生素D的代谢作用是近年来肾脏内分泌学上最显著的发现,Fraser和Kodicek通过摘除肾脏的简单方法证明了肾对维生素D的生物活性是不可缺少的,引起了医学界的极大重视^[9];另外尚有人发现肾脏可以分泌大量促红细胞生成素,此素是作用于骨髓的多肽激素^[9]。Peart, W. S.以“作为内分泌器官的肾脏”为题,提出了肾脏还可以分泌肾素——血管紧张素、前列腺素及其衍生物和血管舒缓素等,说明现代医学对肾脏功能的认识也突破了“肾是泌尿器官”的旧概念,逐步发现肾脏是一个具有多种功能的内分泌器官,这些新的发现对我们进一步理解祖国医学中肾的功能和肾主骨的理论是有裨益的。

小 结

我们从临床观察和部分实验室研究初步证实了“肾主骨”具有一定道理,不仅肾能主骨,反过来骨也可以影响肾,二者有相互作用、相互影响的密切关系。由于祖国医学的肾和现代医学的肾脏并非一致,前者的功能范围远较后者为广,只有把肾主骨的功能和其他功能联系起来和进一步研究现代医学肾的功能,揭示更多的骨病和肾的关系与更多的肾病和骨的关系,可望对“肾主骨”的问题有更深一步的认识。(下接第89页)

病例报告

心肌梗塞后巨大心室壁瘤存活五年一例

北医三院内科心血管组 刘丽 毛节明

据报道心室壁瘤患者在3~5年内死亡者占75~85%。如系巨大的心室壁瘤, 预后更差。

我们采用中西医结合方法治疗一例巨大的心室壁瘤患者, 存活五年。现报告如下:

患者, 男, 65岁, 病历号111340。因反复发作心绞痛七小时, 于1973年5月31日入院。既往有高血压病史。查体: 神清, 体位自如。颈静脉无怒张。两肺清音、呼吸音正常。心界不大, 律整、心率72次/分。血压130/80mmHg。腹软, 肝触及边缘。下肢不肿。X线胸片: 心脏呈主动脉型, 心界饱满, 主动脉迂曲、增宽。心电图: 窦性心律, I度房室传导阻滞。入院印象: 冠心病, 心绞痛。

入院后心绞痛发作频繁, 第三天心电图示: 急性广泛前侧壁心肌梗塞。血G. P T 100单位以下, G.O T113单位。治疗按中医辨证采用生脉散益气养心, 冠心II号、宽胸丸加减活血通脉。并服用二硝基异山梨醇酯或长效硝酸甘油。静脉点滴利多卡因纠正心律失常, 短程抗凝治疗。第六天胸痛更作, 血压90/60mmHg。心电图示: 下壁心肌梗塞。此后心绞痛仍间断发作。多次心电图检查V2~5导联S—T段抬高, 持续不降。第35天, 胸大片示: 梗塞后心室壁瘤形成(图1, 见插图2), 以后检查, 心室壁瘤逐渐增大。

嗣后, 患者心脏功能明显下降, 稍活动即心悸气短。治疗采用西洋参, 每日2~3钱, 并服用西药血管扩张剂(消心痛、长效硝酸甘油), 同时给予小剂量地高辛以维持心脏功能。

对心室壁瘤的并发症处理如下:

1. 急性左心衰弱: 即刻静注西地兰 0.2mg, 静注速

尿 20~40mg, 或加用 Regitine 10mg 静滴。患者曾发生 10 多次, 均取得较好效果。

2. 心律失常: 以频发室性早搏多见, 或形成二、三联律。并多次出现阵发性室性心动过速。先后用利多卡因、心得宁、普鲁卡因酰胺、奎尼丁等作即刻或短期治疗。因室性早搏间断出现, 自1976年起, 加服普鲁卡因酰胺 1~1.5~2g/天, 或异搏停 120~160mg/天, 或以普胺、奎尼丁西药并用, 均可使患者维持窦性心律。

3. 心绞痛: 吸氧、口含硝酸甘油、脉新导敏或肌注罂粟碱等。

4. 感染: 一旦出现低热、咽痒痛、黄痰、即给予抗菌毒及中药治疗。

经治疗后患者生存五年, 于1978年12月1日死亡。

尸检心脏主要病理变化: 冠状动脉粥样硬化, 左冠状动脉前降枝机化血栓形成, 管腔闭塞。左心室心肌广泛陈旧梗死灶伴巨大左室慢性心室壁瘤形成(大小: $10 \times 7 \times 3.5\text{cm}^3$, 壁最薄处为 1cm, 心脏重 770g) 及附壁血栓两个, 大部机化。左心室高度扩张(图2, 见插图2)

体会: 心肌梗塞并发如此巨大心室壁瘤能存活五年者比较少见。本例在维持心功能方面, 除采取了积极纠正心力衰竭和心律失常, 卧床休息, 合理使用洋地黄类强心剂, 及时给予 Regitine、速尿, 以减轻心脏负荷, 重视控制呼吸道感染等西医治疗外, 长期服用补气活血中药, 特别是西洋参, 对改善心功能有益。人参之作用机理之一是对心肌膜三磷酸腺苷酶的活性起抑制作用。

(上接第88页)

参 考 文 献

- 1.《黄帝内经素问》第一版, 154页, 人民卫生出版社, 1979
- 2.《黄帝内经素问》第一版, 4页, 人民卫生出版社, 1979
- 3.《黄帝内经素问》第一版, 242页, 人民卫生出版社, 1979
- 4.《黄帝内经素问》第一版, 247页, 人民卫生出版社, 1979
- 5.薛己:《正体类要》第1页, 上海卫生出版社, 1957
- 6.上海中医学院等:《中医伤科学讲义》第一版, 25页, 上海科学技术出版社, 1964
- 7.西安医学院放射线教研组: 克山病与大骨节病资料汇集(内部资料) 153页, 1958
- 8.Pearl W. S. : Lancet II (8037) 543, 1977
- 9.Montgomery D. A. D. et al : Medical and Surgical Endocrinology P559, London, 1975

Immunological Tests of Uveitis and Studies on Its TCM Treatment

Deng Zihóng (邓子宏)

The Third People's Hospital, Shanghai Second Medical College, Shanghai

Uveitis is a disease caused by immunological disorders. Its treatment with corticosteroids and immunological inhibitors provides a satisfactory immediate therapeutic effect, but with certain side effects. According to the TCM principles of treatment by differentiating syndrome, we have, since 1977, used decoctions of appropriate Chinese medicines to cure the disease and for those who had been under systemic corticosteroid treatment, we gradually decreased the dose of hormones, till their complete withdrawal. Local corticosteroid drops were continued as before, in order to keep up the efficacy of the therapy.

This article analyses the results of immunological tests in 40 cases of various types of uveitis treated by TCM and focuses on 24 cases with complete data. Ocular signs and immunological criteria were improved, with ERFC test rising from 47.42% (abnormal) to 51.25% (normal) ($P < 0.05$). The mean values of immunoglobulins (IgG, IgA and IgM) showed no marked difference ($P > 0.05$). Of the 24 cases, 12 were considered satisfactory, 4 effective, 6 improved, while only 2 cases proved definitely ineffective.

The results reported here suggest that TCM is effective in regulating the immunological functions of human organism.

(Original article on page 75)

Investigation on Tongue Appearances of 1046 Patients with Malignant Tumour—Compared with Those of 500 Healthy Subjects as Control

Chen Zelin (陈泽霖), et al

*Zhongshan Hospital, Huashan Hospital and Cancer Hospital,
Shanghai First Medical College*

This paper reports the results of observations made on tongue appearances in 1046 cases of malignant tumours. Observations of tongue includes tongue coating, tongue substance, tongue body and hypoglossal veins, and 500 cases of healthy subjects were taken as control.

The results show that the incidence of purple tongue is the highest (49.6%), being 3.9 times than that of healthy subjects. The incidences of light-colored tongue (2.4%) and red cardinal tongue (7.3%) are lower. The incidence of denuded tongue (13.9%) is higher than that in healthy subjects, especially in the cases of radiotherapeutic patients with carcinoma of uterine cervix and nasopharyngeal cancer. The incidences of swollen tongue body, fissured tongue and hypoglossal varicose veins are 30.2%, 25.4% and 49.7% respectively compared with 500 cases of healthy subjects, the difference is highly significant statistically ($P < 0.01-0.001$). The results suggest that tongue inspection is certainly of help in detecting malignant tumours, guiding treatment and estimating prognosis. Prognosis for patients with blue purple tongue is bad. The disappearance of blue purple tongue indicates a better prognosis and a longer life expectancy.

(Original article on page 81)

An Initial Study of the Kidney's Control over the Bones

Zhang Chaoran (张超然)

Xian Railway Hospital, Xian

The theory of "the kidney's control over the bones" was first advocated in Huang Di Nei Jing 《黄帝内经》. Such a postulation has since been applied in traditional Chinese medical circles. Nevertheless, little has been learned so far about the exact relation between the kidneys and bones.

On the basis of his knowledge of traditional Chinese medicine and his personal clinical experience, the author presents in this paper his views on the function of the kidneys and their relation with bones. It is considered that the function of the kidneys in the light of traditional Chinese medical theory is much more varied than that viewed by western medicine. According to the clinical data collected over the years, he thinks that not only the kidneys do have their control over the bones, but the bones can also exert their influence on the kidneys. Hence, osteopathia can be cured by strengthening and invigorating the function of the kidneys and the treatment of

osteopathia, for its part, may lead to the prevention of kidney disorders.

The data collected through a series of endemic investigations have shown that in the etiology of Kaschin-Beck disease a significant role is played by genetic deficiency, the essential factor of which lies in the kidneys. In the 51 cases of osteopathia treated with "crust salt"*, for example, measurements of the contents of 24 hrs urinary 17-ketosteroids revealed that the adrenocortical function had been enhanced by the administration of "crust salt" ($P < 0.05$). This serves not only to prove the efficacy of salt in strengthening the kidney, but also to support the theory of "the kidney's control over the bones", for the cases of osteopathia were shown to have been cured through invigorating the kidneys.

In order to reveal the real nature of this theory, much more remains to be done, for the present study is limited in both its conditions and the number of cases.

*"Crust salt" refers to the crust formed after boiling a salt solution in a pan. The salt used is produced in Shanxi Province.

(Original article on page 87)

Effects of "Coronary Heart II" (CH-2, 冠心Ⅱ号) on the Release of Serotonin and the Ultrastructure of Rabbit Platelets

Shi Qihuang (时其煌), Gao Haiquan (高海泉), et al
Department of Pharmacology, Institute of Basic Medical Sciences,
Chinese Academy of Medical Sciences, Beijing

Serotonin was measured by fluorspectra. CH-2, at a concentration great enough to inhibit the collagen-induced aggregation of rabbit platelets was found to decrease the amount of serotonin released from the platelets. This effect of CH-2 was concentration-dependent. As confirmed by electronic microscopy, CH-2 inhibited the release of platelet granules, but not the formation of pseudopodia. It is suggested that the inhibition of platelet release reaction may result from the inhibition of cAMP phosphodiesterase.

(Original article on page 90)

The Protective Effect of Chrysanthemum Indicum L Extract (CI-2) on Myocardial Injury in Cultured Neonatal Rat Heart Cells Deprived of Oxygen and Glucose

Li Yingou (李映欧), Li Lianda (李连达), et al
Xiyuan Hospital, Academy of TCM, Beijing

An in vitro model of myocardial cell injury was established with primary monolayer cultures of neonatal rat heart cells by depriving the cultures of oxygen and glucose for 6 hrs. This new experimental model could imitate myocardial ischemia, for oxygen and substrate deprivation was the two important aspects of ischemia. Cellular injury caused by hypoxia and glucose deprivation resulted in ultrastructural changes, decrease in beating activity and significant leakage of lactate dehydrogenase (LDH) from the cells into the culture medium. LDH in medium, which reflected the degree of cellular damage, was used to evaluate protective effects of various drugs. The authors observed that CI-2 reduced the release of LDH from injured heart cells deprived of oxygen and glucose. The results indicated that CI-2 had direct effects in protecting the injured heart cells in cellular level. In addition, it was also observed that 10^{-5} M propranolol showed similar protective effect while 10^{-4} M isoprenaline exacerbated heart cell injury. And 10^{-4} M dexamethasone was found to have no effect in protecting cellular injury in our experiments.

(Original article on page 93)

Effect of Qing Yi Decoction No.1 on the Pancreatic Exocrine Function of Rats

Zhao Liangun (赵连根), et al
Institute of Acute Abdominal Diseases, Tianjin

This study reports the effects of 清胰汤 I 号 (Qing Yi decoction No.1), a common TCM-WM therapeutic prescription for acute pancreatitis on the exocrine pancreas of rat. Under sterile conditions a catheter was