

经验交流

同种脱钙骨移植 88 例报告

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摘要 本文报告 88 例应用脱钙骨移植修复和治疗良性骨肿瘤、骨折骨不连、慢性骨髓炎、骨关节结核等，经随访 55 例效果满意。作者认为 X 线评定等级不同与随访时间紧密相关，随着时间的延长其完全修复与基本修复率将会大大上升，因此脱钙骨粉是一种优良的生物性骨移植材料，期望引起骨科同道的重视。

关键词 脱钙骨粉 诱导成骨 骨缺损

1968 年 Urist⁽¹⁾首先用表面脱钙骨修复骨缺损，其后主要是口腔和颌面外科的临床报告，1968~1983 年间共报告 234 例，其中最多一组 50 例；骨粉移植者仅两组共 56 例^(2,3)。我院在 1981 年动物试验成功的基础上⁽⁴⁾，于 1983~1985 年应用 88 例，经随访效果满意，现报告如下。

材料和方法

死亡后 6 小时的尸体四肢长管状骨按脱钙骨的制备方法处理：皮质骨磨成骨粉，松质骨剪成 0.3×0.5×0.5cm³ 左右的碎骨块，进行脱水、脱脂、脱钙、安瓿封装，⁶⁰钴 2MRad 照射，连续三次细菌培养阴性，贮 4℃ 冰箱内保存备用。移植前按病损情况使用病灶清除、切除、灭活或复位内固定等方法准备植骨床，将封装的脱钙骨置入 2% 碘酒中浸泡 30 分钟消毒，凡碘酒浸入安瓿内废弃不用。继用 75% 酒精、生理盐水洗去碘酒，敲开封装倒出脱钙骨。植骨床创面渗血少者用适量生理盐水调拌成糊状移植，植入后稍加压，若创面渗血多则直接将骨粉倒入植骨床后加压，也可以用明胶海绵覆盖加压，当植骨床面积过大可用骨粉与碎骨块混合移植。

临床资料

一般情况：88 例中男 59 例，女 29 例；最大年龄 62 岁，最小年龄 8 岁；病史最长 26 年，最短 4 小时。

诊断及随访：88 例诊断及部位见表 1，其中良性肿瘤 53 例，骨折及骨不连 14 例，慢性骨髓炎 15 例。除失访及少数术后时间较短不

能评定疗效外，经 4~26 个月随访 55 例，其中良性肿瘤 36 例，骨折及骨不连 8 例，慢性骨髓炎 8 例。

表 1: 88 例诊断及部位表

	脊 椎	骶 髂 关 节	腕 骨	肘 骨	尺 桡 骨	掌 指 骨	股 骨 颈	股 骨	胫 骨	腓 骨	距 骨	趾 骨	锁 骨	髌 骨	合 骨 计	
动脉瘤样骨囊肿								1							2	
骨囊肿								5	1	2	1	2	1	1	13	
骨纤维异样增殖症							2		1	4	5				12	
非骨化性纤维瘤									4	2					6	
巨细胞瘤							1		5	5					11	
粘液瘤										1					1	
内生软骨瘤									3						3	
骨样骨瘤													1		1	
骨纤维瘤												1			1	
嗜伊红细胞肉芽肿														1	1	2
骨肉瘤										1					1	
骨折及骨不连骨缺损	6		1	1	1	4					1				14	
慢性骨髓炎			1		1				6	2	3				13	
骨脓肿							1			1					2	
骨关节结核			3	1							1	1			6	
共 计	9	2	11	1	6	7	14	25	5	6	1	1	88			

腔洞性缺损大小及脱钙骨用量：80 例中腔洞性缺损 64 例，最大容积 70cm³，最小 1.8cm³，其中 3 例股骨颈腔洞性缺损合并应用带血管蒂髂骨瓣移植。

X 线评定标准：脱钙骨移植后在 X 线片上是透光的，因此判断成骨作用的标准是以术后照片作为对比，共分为四级：I 级，骨腔或植骨床密度增加，说明已有骨化；II 级，骨腔或植骨床密度显著增加，说明已基本骨化；III 级，骨腔基本消失或植骨床与脱钙骨基本融合成一片；

Ⅳ级,骨腔完全消失或植骨床与脱钙骨完全融合成一片。

结 果

伤口情况:88例中一期愈合83例(其中伤口术后有淡黄色浆液性渗出液者11例,经换药后4周内均完全愈合),伤口裂开4例(其中2例换药后二期愈合,1例失访,1例胫骨上端缺损者膝关节前面形成慢性窦道再入院,在病灶清除术中见有残留丝线头及炎性肉芽组织,段缺损处有大量新骨形成并经病理检查证实),伤口感染1例(失访)。

随访情况:随访时间最长26个月,最短4个月,平均9.5个月,除1例伤口裂开形成慢性窦道外,愈合的伤口无复发。X线片评定:0级1例,Ⅰ级5例,Ⅱ级15例,Ⅲ级19例,Ⅳ级15例。由于随访时间的差异,X线片评定级别的统计说明骨腔或植骨床的密度随着时间的增长而增加,骨腔洞基本消失或完全消失;即术后时间越长评定的级别越高。本组经随访的55例中除1例跟骨骨髓炎外,X线片上普遍都有不同程度的骨化影,占98.1%,包括有慢性窦道形成的1例在内,随访病例的症状基本消失,功能也基本恢复或完全恢复。

并发症:88例中伤口渗液11例,占12.5%,伤口裂开4例,4.5%,伤口感染1例,占1.1%。

讨 论

1889年Senn^[5]开始脱钙骨的实验研究;1965年Urist^[6]证实HCL脱钙骨的诱导成骨作用;1968年Urist^[1]首先用于临床修复骨缺损,继后临床应用也多以表面脱钙骨、脱钙骨块为主。直到1981年Glowacki^[2]方开始用骨粉修复颅、颌面部缺损并取得显著成效;1983年Sonis^[3]又用骨粉修复牙周缺损。脱钙骨粉用于修复骨科四肢骨缺损者报导较少,其原因可能是骨粉容易松散流失,缺乏支撑作用等缺陷所限制。但骨粉在修复腔洞性骨缺损方面更具有充填紧密,接触面大,便于毛细血管和间充质细胞伸入加速成骨等优点;为了弥补

骨粉移植中松散流失则可用以下方法加以克服:(1)用腔洞开窗的盖壳或明胶海绵堵塞腔洞缺口;(2)骨粉内加入适当份量的明胶增强其粘稠度;(3)骨粉与骨块混合移植;(4)创面渗血多者可直接将骨粉倒入缺损内。脱钙骨种类的选用应按临床工作中实际需要来决定,不必拘泥于某种形式;腔洞性缺损以骨粉最好,但若面积过大则可掺合碎骨块移植,即可增加一定的支撑力,又可防止骨粉流失;脊柱融合也以骨粉和碎骨块掺合移植为好。

并发症:本组脱钙骨移植后无明显的全身性反应。局部并发症是:(1)渗出液:88例中11例术后3~4天内有少量黄色浆液性渗出液,经换药后2~4天内全愈合;随访表明并未影响成骨作用。渗出的原因是病损表浅,软组织覆盖少(如胫骨缺损),加之混拌骨粉的液体和创伤性渗出液的总比重一般手术为多,随着组织修复的机化过程则会将未完全被吸收的液体逼出伤口外;另外本组使用的骨粉采用⁶⁰钴,MRad照射,其剂量尚不可能完全消除排异反应,也可能是原因之一。但伤口均于2~4周内愈合,随访中并不影响成骨作用,故仍以2MRad的剂量为宜;否则加大剂量虽然可以完全消除排异反应,但成骨作用也会随之降低甚至消失^[7]。(2)切口裂开4例,随访中2例伤口已愈合成骨良好,1例失访;1例慢性窦道形成但成骨仍然良好;所以伤口裂开并不影响成骨作用。裂开的原因除类同伤口渗出物外,可能与移植的技术和手术技术本身有关,尚须进一步探索。(3)切口感染1例,系髋髂关节结核继发感染瘘道形成,经病灶清除术后植入骨粉,术后发生感染。

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辨证治疗痛风性关节炎 27 例

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痛风,又称历节风,白虎历节,因多发于关节故称痛风性关节炎。好发于第一跖趾关节,以关节的疼痛、肿胀、功能障碍、痛风结节形成等为主要临床体征。治疗颇为棘手,《金匱要略》用乌头汤,《张氏医通》用千金犀角散,《丹溪手镜》用四物汤,今人有用大黄汤加减治疗者,有用消痛饮加减治疗者,也有用消肿膏外治者,均取得了一定疗效。本人从 1984 年以来采用中药辨证治疗痛风性关节炎 27 例,取得了满意疗效,现总结报告如下。

临床资料

一般资料:本组 27 例,男 18 例,女 9 例;年龄均在 27 到 65 岁之间,平均 55 岁,50 到 60 岁者发病居多,占 2/3。第一跖趾关节 23 例,单发 19 例,双侧 4 例,指间关节 3 例,掌指关节 1 例;病程最长 23 年,最短 15 天;用过消炎痛、秋水仙素、别嘌呤醇者 20 例,服过中药者 18 例,6 例发病后未用过任何药物。

诊断标准:①手足部小关节不明原因的剧烈疼痛、肿胀、不能活动,并排除类风湿和风湿性关节炎者;②血尿酸检查在 6mg 以上者;③发病在半年以上 X 线检查关节面有穿凿状或虫噬样病损;④服过秋水仙素、别嘌呤醇等症状控制而停药后复发者。凡有以上四项中三项者均可诊断为痛风性关节炎。

辨证治疗

1. 风湿型:久感风寒湿邪,郁而不散,搏击于关节所致,症见关节突然剧烈疼痛,日轻夜

重、关节肿胀、不能活动、动则痛甚,遇阴雨天加重,舌体胖大有齿龈,苔白,脉迟缓等。治宜祛风除湿,行气止痛,用羌活、独活、威灵仙、细辛、牛膝、木瓜、防风、土茯苓、白术等加减治疗。

2. 寒湿型:为寒湿之邪入侵关节,阻滞经脉,气血不通,症见患手或足冷痛,夜间尤甚,遇热则减遇寒加重,局部关节肿胀,不能活动,或伴有形寒肢冷,小便清长,大便溏稀,舌质淡苔白脉弦等,治宜温经散寒,祛湿止痛。药用附子、羌活、威灵仙、当归、茯苓、细辛、天麻等。上肢加桂枝、桑叶,下肢加牛膝、木瓜。

3. 血虚型:素体气血虚弱,不能濡养关节,致风寒湿三气杂至,侵犯于肌肉关节而成。表现为关节严重疼痛,但肿胀不甚,活动不便,患足(或手)畏寒怕冷,或肢体末梢感觉迟钝,或伴有食少乏力,心悸气短等,舌质淡、苔白,脉沉细无力等,治宜益气养血,散寒祛风,药用黄芪、当归、桂枝、白术、赤芍、川芎、桃仁、牛膝、红花等。

治疗结果

本组 27 例 25 例治愈(即肿胀、疼痛消失、功能恢复、血尿酸在 5mg 以下,且半年以上随访未见复发),1 例服药 10 余付效果不著,1 例因病程较长,关节严重变形,并有局部皮肤破溃,X 线片示有可疑病理性骨折,关节周围有大量骨赘形成,无法保守治疗,行病灶清除加植骨术。

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Abstract of Original Articles

Clinical and experimental studies on relation between derangement of lumbar posterior facet joints and posteromedial branch of lumbar spinal nerve

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Via analysis of 53 cases of derangement of lumbar posterior facet joints, and based on the cause of lumbago, they were grouped into periarticular and intraarticular two types. Through microanatomical observation of 100 posterior medial branch of lumbar spinal nerve from 10 cadavers, it was proved that the posterior facet joints were chiefly innervated by posteromedial branch. They were compressed by multiple factors along their course and passage. The pathogenesis and principle of manipulative therapy of the ailment were explored based on the neuro-anatomical and physiological data.

Key words Derangement of lumbar posterior facet joint
Lumbar posteromedial spinal nerve
Manipulative therapy Experimental study

(Original article on page5)

B ultrasonic analysis on influence of spinal Tuina therapy under analgesic traction in treating protrusion of lumbar intervertebral disc

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Forty three segments of 38 cases of protrusion of lumbar intervertebral disc were reported. After treated with spinal Tuina therapy under analgesic traction 3 to 6 months the therapeutic results of rate of good and fair were 71% and 87% respectively. The B ultrasonic examination revealed that there were disappearance of the protruded mass in 9 segments, markedly shrinkage in 13, slight shrinkage in 8, no change in 7, enlarged in 6 ($p > 0.05$). Though there was a tendency of shrinkage of the protruded mass as a whole ($P < 0.05$), there was no correlation as compared with the therapeutic effects ($P > 0.05$). The results indicated that the mechanism of the therapy might be due to displacement and changing of the shape of the protruded mass and removing the pathological factor of the protruded mass exerting on the nerve root or dural sac in various degrees. Whether the protruded mass could return to its original place is not decisive factor in the therapeutic effect.

Key words Protrusion of lumbar intervertebral disc
Spinal Tuina B ultrasonic examination
Mechanism of the therapeutic effect

(Original article on page8)

A comparison on the effectiveness among fibrin binder, ZT gum and suture of the interrupted peripheral nerve

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Forty five rats were divided into 3 groups at random and their right sciatic nerve were cut by the authors. They were connected with fibrin binder in the first group, the epineurium were adhered with ZT gum in the second group, thread of 90 was used in the suture of the epineurium routinely in the third group. Five animals of each group were tested one, two and three months postoperatively. Effects of these three groups were evaluated with electrophysiological, histological and ultramicroscopic observations. The results indicated that there were no prominent difference among the three methods. The first two measures bear the advantages of simple, save time and easy to be applied, no nerve injury and accurate in end-to-end anastomosis, so they are valuable in clinical application.

Key words Tissue binder Peripheral nerve injury

(Original article on page11)

Malunion of the femoral shaft treated by external fixator

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Various methods of osteotomy in correction of different kinds of malunion of the femoral shaft and fixed with external fixator were applied. From 1987 to 1991, 23 cases were treated, among them the largest angulation was 50°, shortening of the affected limb being 6cm. During treatment, the average fixation time was 10 weeks. After treatment, the length of limb and function of the hip and knee joint were restored satisfactorily. The advantages of the therapeutic measure were discussed.

Key words External fixator
Fracture of the femoral shaft
Malunion

(Original article on page19)

A report on 88 cases of homotransplantation of decalcified bone

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Eighty eight cases of homotransplantation of decalcified bone were used in treating benign bone tumor, non-union, chronic osteomyelitis, TB of bone and joints etc. After follow-up of the 55 cases, the results were satisfactory. The author realized that the result of X-ray changes were closely related with the interval of follow-up. The rate of complete restoration and basic restoration could elevate prominently along with the prolongation of the interval. So, decalcified bone powder is a good biological bone transplanting material. It is worthwhile to introduce to our colleagues.

Key words Decalcified bone powder
Induced to bone formation
Bone defect

(Original article on page24)