

题,Armstrong 报道 1000 例中有 107 例为双间隙突出^[1],故这类患者应根据术前检查,术中要探查双间隙,以免只摘除 1 处,遗漏他处,残留症状。本组遇有 8 例为双间隙间盘突出,均作了双间隙的间盘摘除。(2)腰间盘突出同时伴有侧隐窝狭窄者,文献报道发生率高达 56%^[2],本组共 41 例均作了相应的侧隐窝扩大术。(3)为维持术后脊柱的稳定,本组除伴有椎管骨性狭窄者施行棘突及全椎板切除外,均为病侧半侧椎板切除术,此术式不会破坏脊柱的稳定。(4)术中止血应彻底,否则术后血肿大可压迫硬膜囊及马尾,血肿机化后亦可造成后遗症。本组术中严密止血,有渗血者用明胶海绵覆盖,术后应用负压引流,以减少血肿形成。(5)为防止术后粘连,在手术完成后注入椎管内 10% 川芎嗪注射液 10ml^[3]。

3. 术后早期背伸肌及下肢肌力功能锻炼,有助于改善循环,减轻及防止粘连,恢复肌张力及弹性,使脊柱获得稳定,防止复发。内服药系沿用六味地黄汤以补益肝肾、除湿利水,配合活血药物及舒筋活络药物等。对腰间盘术后强筋壮骨、增强体质、舒通经络、消除组织水肿及防止粘连等均有不可忽视的作用。

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钢丝穿孔环扎术固定锁骨的生物力学分析

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摘要 根据锁骨的解剖学及骨折类型分布特点,研究设计了钢丝穿孔环扎术固定锁骨骨折的方法,即在骨折端两侧缘分别穿 2 孔,孔孔相对,用直径 0.3mm 钢丝穿孔后进行环扎固定,经与克氏针穿针固定在生物力学方面的比较,认为钢丝穿孔环扎具有抗弯、抗扭强度大的优点,讨论了钢丝穿孔环扎术的作用机制。

关键词 钢丝穿孔环扎术 锁骨

作者根据锁骨的解剖特点及骨折类型的分布特点,提出了钢丝穿孔环扎术,经生物力学实验证实较克氏针具有一定的优越性,现报道如下。

材料与方法

1. 湿尸锁骨 24 根,随机分为对照组,克氏针穿针固定组,钢丝穿孔环扎固定组等三组。每组 8 根湿尸锁骨。

2. 对照组不作任何处理。实验组在锁骨中段人为制成 45° 斜型骨折,分别采用临床上最常用的直径为 2.0mm 克氏针穿针固定和直径 0.3mm 钢丝穿孔环扎固定,即在骨折端两侧缘

分别钻 2 孔,孔孔相对,然后用已选定的钢丝穿孔,骨折端对合后进行环扎固定,环扎在骨折两端分两组进行每组环扎圈数为 2 圈。三组锁骨分别在骨两端用牙托粉制成 3×3×3cm 立方体平台,以便进行加载。三组分别在 SWD-10 型万能实验机和 NJ—50B 型扭转试验机上进行抗弯、抗扭转实验,测定其抗弯强度和扭转强度。

实验结果

对照组在抗弯强度和扭转强度高于实验组。实验组中钢丝穿孔环扎固定组各项指标均高于克氏针穿针固定组(见表 1、2)

表 1 锁骨抗弯试验比较

	弯曲极限 载荷(N)	极限强度 (N/mm)	极限弯矩 (N·m)	最大挠度 (°)
锁骨对照表	1143.00	116.00	32.00	11.00
克氏针固定组	254.16	32.58	7.12	15.84
钢丝穿孔环扎组	465.96	59.73	13.05	13.02

表 2 锁骨抗扭试验比较

	扭矩 (N·m)	扭转强度 (N/mm)	扭角 (°)
锁骨对照组	170.55	87.08	8.80
克氏针固定组	27.09	24.44	14.08
钢丝穿孔环扎组	49.67	44.80	9.68

讨论

手术方法治疗锁骨骨折目前国内外不乏报道,其中克氏针穿针固定因其操作简单、取针方便而被广泛采用,但效果决非理想。骨折后固定强度一是取决于固定后的抗弯强度,二是抗扭转强度。骨质的强度分为极限载荷和生理载荷,极限载荷通常是生理载荷的 20~50 倍^[1]。骨折后固定强度必须超过骨质的生理载荷且超出越多固定越确实。

直径 0.3mm 钢丝穿孔环扎固定其抗弯强度即弯曲极限强度为 59N/mm²,超过锁骨弯曲极限强度 116N/mm² 的一半。完全达到和超过锁骨的生理载荷,且接近克氏针穿针固定组的两倍,因此固定更确实。其机理在于固定后将骨折端的屈曲力转变为对钢丝的张力。钢丝穿孔环扎固定组的扭转强度为 44.80N/mm²

超过了锁骨扭转强度的 1/2,几乎也是克氏针穿针固定的 2 倍,其机理在于钢丝穿孔环扎固定改变了常规钢丝环扎本身不固定而易于滑动的缺点,使钢丝固定于骨折端两侧缘的对合孔内,在解剖复位后使骨折端形成牢固的端端对合,因此其扭矩的大小已不取决于钢丝本身的强度,而在于骨折端两侧缘所能承受的压力,即骨折端两侧缘骨质的强度。

直径 2.0mm 克氏针穿针固定的弯曲极限强度实际上是克氏针本身的极限强度,其扭转强度实际上是克氏针与髓腔内壁之间的摩擦力的反映,由于与髓腔内壁之间的摩擦系数相对恒定,只有通过增大克氏针的横径,才能扩大克氏针与髓腔内壁的接触面积和接触压力,从而提高摩擦力和克氏针的抗弯能力,但由于髓腔大小制约了克氏针的横径增加,所以要以此来提高克氏针的固定强度难以实现。因此,克氏针穿针固定锁骨骨折由于固定不够确定,成角和短缩甚至骨不连接时有发生,又由于克氏针穿针固定常常损伤肩锁关节及肩周肌肉,也可导致术后关节活动受限及关节疼痛。钢丝穿孔环扎固定不仅固定了骨折端,也固定了钢丝本身使固定强度大大提高,较适用于锁骨的斜型和粉碎型骨折也能避免克氏针对肩锁关节和肩周肌肉的损伤。

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Abstract of Original Articles

Application of integration of TCM and modern medicine in elevation of operative effect in treating prolapse of lumbar intervertebral disc

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Operative treatment of prolapse of lumbar intervertebral disc is not difficult, but reoperation of part of the cases were carried out due to improper master of indication, incorrect localization, improper operative style or technical fault ect. In elevation of operative therapeutic result, better effects were obtained after proper indication being mastered, applying Chinese herbs postoperatively and early physical exercise being used. One hundred and ten cases were operated, no one case needs reoperation. The rate of excellent and good was 98.1%.

Key words Prolapse of lumbar intervertebral disc Indication of operation Integration of traditional Chinese and modern medicine

An analysis on biomechanics in fixation of fracture of clavicle with steel wire perforating and annular ligating method

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Based on characteristics of anatomy and types of fracture of clavicle, steel wire perforating annular ligating method was designed, i. e. two wholes at one level were perforated on two ends of fractured clavicle, then a diameter of 0.3mm steel wire was passed through them and fixed with annular ligation, And it was compared with Kirschner's pin based on biomechanics. It was realized that the former bears advantages of antiwinding effect and anti-torsion strength. The mechanism of steel wire perforating annular ligating method was discussed.

Key words Steel wire perforating annular ligating method Clavicle

Experimental observation of rabbit osteo myelitis treated with Sheng Ji Xiang Pi Gao chain

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Models of chronic osteo myelitis in bilateral upper epiphyseal end of tibia of the rabbits were treated with debridement of the lesion, then Sheng Ji Xiang Pi Gao chains were implanted in the left bone marrow, the right side served as control. Through gross and pathological slice observation, the results showed that there were less and quick disappearance of blood clot within the marrow, and the granulation grew abundantly and healthy, very less formation of multiple abscesses in the experimental side. The local pus formation as increased on the experimental side, it was most prominent at 5th-10th day. The pus was decreased immediately after removal of the chain, then the wound was healed afterwards.

Key words Sheng Ji Xiang Pi Gao chain Chronic myelitis Rabbit

Motive study of fibrin binding protein in wound healing-Mechanism of Wei Nong Zhang Rou (IV)

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Thirty-two rabbits were selected to make infected wound surface models to observe the motive changes of fibrin binding protein and contents of it at the wound surface, and the influence of external application of Chinese herbs. The results of experiment indicated that there were positive correlation of fibrin binding protein and wound surface healing time, but there were evident negative correlation with wound fibrin. Application of Chinese herbs can elevate prominently in wound surface fibrin, there were significant difference($P < 0.01$) as compared with the control. This suggested that external application of chinese herbs is a good regulation of wound surface fibrin. It can elevate contents of wound surface fibrin, increase local anti-infective and repairing ability of injury and reach the aim of accerelate wound healing.

Key words External application Chinese herb Fibrin binding protein Wound healing

Thirty nine cases of fracture of clavicle treated with fixator

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Thirty nine cases of fracture of clavicle were treated with self-designed fixator with better results. Among them, three cases were failure due to operation and another therapeutic method had to be used. Thirty six cases were discharged at 4th-6th week postoperatively. Among them, 8 cases were reduced anatomically, 16 cases near anatomically, one case had displacement evidently, and one was mild dislocated, with a rate of excellent and good of 89.2%. A follow-up of 3 months to 3years postoperatively were carried out, all cases were healed in good condition. Two bone holding forceps were used to hold the fractured ends of two sides subcutaneously, then moved the forcep according to the position of two ends, regulating the screw to check if any displacement was found to obtain accurate reduction. The fixator was fixed on the chest wall by means of crossed wood splint and pressed-screw action. Due to the instrument is light and small, so it wouldn't influence the patient to wear clothes and action. Exercise was taken to improve healing. It was due to strong fixation, so it offers a googcondition in bone healing.

Key words Fracture of clavicle External fixator External fixation