

改良 Woodward 术式联合锁骨截骨术治疗 Sprengel 畸形 1 例

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Modified Woodward's operation combined with clavicular osteotomy in the treatment of Sprengel malformation: a case report

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患儿,女,4岁。在出生时被发现右肩胛骨突起,随年龄增长右肩突出较左肩更明显,伴有右肩外展上举受限,不伴有疼痛,未经系统治疗。无产伤及外伤史,无家族史。查体:患儿耸肩短颈,右肩胛骨突起,肩关节高于对侧5cm,肩胛骨上角靠近枕骨,局部无压痛,脊柱向右侧弯,胸廓未见畸形,右肩关节外展约80°。诊断:先天性高肩胛症(Cavendish 4级)(图1a-1d)。全麻,取仰卧位,常规消毒铺巾锁骨区皮肤。以锁骨中点为中心,切开皮肤及皮下组织,显露骨质,用尖嘴咬骨钳咬断锁骨中段,见右肩部耸肩畸形略有改善,逐层缝合此切口(图1e)。再取俯卧位,然后分别予胸部及双侧髂部垫枕,常规消毒铺巾右上肢及双侧肩背部。自C₁棘突至T₉棘突作为一后正中切口,于棘突上切断斜方肌和大小菱形肌的起点,然后翻开游离的肌肉瓣,显露出肩胛骨的肩椎骨桥及纤维束带,连同骨膜切除肩椎骨桥(图1f),保护神经血管。用尖嘴咬骨钳咬除肩胛骨内上角及松解周围的纤维束带,将肩胛骨下移至接近正常位置(图1g),使双侧侧肩胛区达到同一水平位置。用缝线穿过肩胛骨固定在棘突及周围韧带处,稳定肩胛骨在此矫正位置后,再将斜方肌、菱形肌缝回原起点以下的位置,患肢用肩-肱吊带包扎。术后患者未见臂丛神经损伤,2周后行肩关节上举、内收、内旋功

能锻炼,手指划圈及爬墙训练。术后10d复查CT提示右肩胛骨上角较术前下降2个椎体,患肩外观较术前明显改善(图1h)。术后6周复查胸部正位片提示右锁骨骨痂已形成(图1i),查体右肩外展恢复至160°(图1j)。

讨论

(1)Sprengel 畸形的发现和病因。Sprengel 畸形是临床上较少见的一种先天性肩胛骨高位畸形,又名肩胛骨发育不良,隐肩胛骨或肩胛骨提高。1863年由Eulenburg首先描述,1891年Sprengel又报道4例,并讨论病因,所以命名Sprengel畸形^[1]。正常的胎儿肩胛骨在大约5周时并列于C₄、C₅和C₆颈椎间的子宫胚层中分化,在第9到12周间向尾部迁移到第2和第7根肋骨之间的正常位置。然后肩胛骨比率(高宽比)逐渐降低,直到达到成熟尺寸。这一适应被认为提供了更大的上肢范围。对于Sprengel畸形的患者来说,这一过程被认为受到阻碍。纤维的、软骨的或骨性的连接肩胛骨和颈椎的结构(肩椎骨桥)被认为是阻止肩胛骨下陷的证据^[2]。虽然查体时经常能看到“隆起的”肩胛骨,但从胚胎学的角度来说它应该被称为未下降的肩胛骨^[3]。

(2)Sprengel 畸形的手术治疗方法。对于这种未下降的肩胛骨保守治疗通常是无效的,而手术方法主要包括改良Woodward术式和改良Green术式,目前多采用改良Woodward术式。改良Woodward术式是通过中线切口进行显露,松解斜方肌和菱形肌,切除部分肩椎骨及肩椎骨桥,然后将肩胛骨复位,手术创伤小且效果显著。改良Green术式相比较而言创

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图 1 患儿,女,4岁,先天性高肩胛 **1a**. 术前外观示患儿右肩外展上举受限,耸肩短颈,右肩胛骨突起 **1b**. 肩关节高于对侧 5 cm, 肩胛骨上角靠近枕骨 **1c**. 术前 3 d 胸部正位 X 线片示右侧肩胛骨突起 **1d**. 术前 3 d 胸部和肋骨 CT 及三维重建示右侧肩胛骨上角平 C₅ 水平 **1e**. 术中咬骨钳咬断锁骨中段 **1f**. 切除肩椎骨桥 **1g**. 肩胛骨下移至正常位置 **1h**. 术后 10 d 胸部和肋骨 CT 及三维重建提示右肩胛骨上角平 C₇ 水平 **1i**. 术后 6 周胸部 X 线片示右锁骨骨痂已形成 **1j**. 术后 6 周外观右肩外展恢复至 160°

Fig.1 A 4-year-old girl with Sprengel malformation (congenital high scapula) **1a**. Preoperative appearance showed that the right shoulder abduction and lifting were limited, the shoulders were

shrugged and the neck was short, and the right scapular protrusion **1b**. The shoulder joint is 5 cm higher than the opposite side, and the upper corner of the scapula is close to the occipital bone **1c**. Anterior chest radiograph 3 days before operation showed right scapular protrusion **1d**. Three days before operation, chest and rib CT and three-dimensional reconstruction showed the level of C₅ of the upper angle of the right scapula **1e**. During the operation, the middle clavicle was broken with rongeur **1f**. Excision of shoulder vertebra bridge **1g**. Move the scapula down to the normal position **1h**. CT and 3D reconstruction of chest and ribs 10 days after operation showed that the upper angle of right scapula was level with C₇ **1i**. Chest plain film at 6 weeks after operation showed that right clavicular callus had formed **1j**. At 6 weeks after operation, the abduction of the right shoulder recovered to 160°

伤大且术后易形成较大的瘢痕影响肩关节活动^[4]。同时,两种术式术中肩胛骨的截骨和移动都容易牵拉到臂丛神经。因此部分术者认为行锁骨截骨术有助于术中肩胛骨的下降及降低臂丛神经损伤可能。本病例行改良 Woodward 术式和锁骨截骨术主要基于以下考虑:①患儿年龄>3岁,其解剖结构较为成熟,手术难度及风险可以接受;②改良 Woodward 术式手术创伤小、效果显著、术后疼痛较轻;③患儿右肩胛骨畸形明显,Cavendish 分级呈 4 级,采用锁骨截骨术能在术中促进肩胛骨的下降,降低术中臂丛神经被牵拉损伤的风险^[5]。对于本例患儿,未下降的右肩胛骨造成右肩关节活动明显受限以及患肩外观畸形明显,手术指征明确,因此认为行改良 Woodward 术式与锁骨截骨术是较为合适的。

(3)联合锁骨截骨术的优点。尽管锁骨截骨会带来不小的创伤,但锁骨的位置,特别是在胸锁关节处会阻碍术中肩胛骨的充分下降。而将锁骨截骨作为

矫正畸形前的常规手术,这可以使得肩胛骨很容易地向下移动,而降低损害神经血管的可能。另一方面,由于患儿基本解剖结构已成熟,其可塑性较高,锁骨截骨带来的创伤也被认为是可以接受的。因此,许多术者认为锁骨截骨联合肩胛骨下移对于 Cavendish 3 和 4 级这类严重畸形是有效且可行的,并能一定程度上减少锁骨和畸形胸壁之间可能发生的神经血管压迫的风险。

(4)本例治疗体会。本例患儿治疗结果显示,采用 Woodward 术式联合锁骨截骨治疗 Sprengel 畸形是有利于肩胛骨复位及降低术后臂丛神经损伤的一种安全治疗方法。对于 Sprengel 畸形而言,由于肩胛骨的异常以及经常伴随的脊柱和胸壁不对称的异常,我们不能指望单一的手术可以纠正这种畸形,适当的联合锁骨截骨更有助于治疗。同时对于术中切除肩胛骨具体大小或比例仍然需要进一步研究与探索,切除过多则易对儿童肩胛骨发育造成阻碍,切除

股骨颈骨折闭合复位方法的选择策略

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【摘要】 对于计划进行内固定治疗的股骨颈骨折患者, 骨折端良好的对位是内固定稳定和骨折愈合的重要前提。对有移位股骨颈骨折的复位方法相关文献报告很多, 归纳起来不外乎 3 大类, 一是单纯下肢纵向牵引为主, 辅以其他如旋转、按压等手法; 二是下肢纵向牵引加髋部横向牵引所形成的合力来复位; 三是以屈髋垂直牵引为主的复位方法。每种复位方法各有其优势报告, 但没有一种方法可以适用所有的骨折移位。本文将文献中的一些经典的复位手法作一简要综述。希望临床医生不要囿于某一复位方法, 在临床工作中更应依据股骨颈骨折患者的骨折移位特点, 分析损伤机制和骨折移位过程, 灵活选用针对性的复位方法, 以提高股骨颈骨折闭合复位的成功率。

【关键词】 股骨颈骨折; 骨折复位; 骨折闭合复位; 牵引; 手法

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Review of closed reduction techniques for femoral neck fracture

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ABSTRACT For patients with femoral neck fractures who plan to undergo internal fixation, satisfied alignment of fracture ends is an important prerequisite for internal fixation stability and fracture healing. There are many reports on the reduction methods of displaced femoral neck fractures, which can be summarized into three categories: First, the solely longitudinal traction of lower limbs, supplemented by other manipulations such as rotation and compression; Second, the resultant force formed by the longitudinal traction of lower limbs and the lateral traction; the third is accomplished by vertical traction in the axis of femur with hip joint flexed. Each reduction method has its own advantages, but no single method can be applied to all fracture displacement. In this paper, some classical reduction techniques in the literatures are briefly reviewed. It is hoped that clinicians will not be limited to a certain reduction method, they should analyze the injury mechanism and fracture displacement process according to the morphology features and flexibly select targeted reduction methods to improve the success rate of closed reduction of femoral neck fracture.

KEYWORDS Femoral neck fracture; Fracture reduction; Closed fracture reduction; Traction; Manipulation

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在连续几个版本的《Campbell's Operative Orthopaedics》^[1]中, “对于所有计划内固定的患者都应尝试进行闭合复位”是一直存在的内容。这也是每个骨科医师治疗股骨颈骨折的基本共识。但对于如何进行闭合复位, 尚无统一的标准。GARDEN^[2]在其论文

过少易致术后外观仍有明显畸形, 甚至截骨后若与原肩椎骨桥切除处距离过近还需考虑复发风险。因此, 对于先天性高肩胛的治疗还需进一步探索与研究。

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