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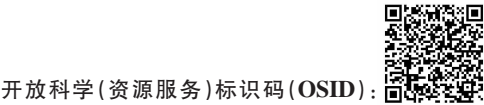
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• 病例报告 •

关节镜下治疗巨大肩胛下肌腱钙化性肌腱炎 1 例

王轶博,徐慧英,项鹏,徐鹏
(吉林大学第一医院运动医学科,吉林 长春 130021)
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开放科学(资源服务)标识码(OSID):

Arthroscopic treatment of one case of calcified tendinitis of huge subscapular tendon WANG Yi-bo,XU Hui-ying, XIANG Peng,and XU Peng. Department of Sports Medicine,the First Hospital of Jilin University,Changchun 130021,Jilin, China
KEYWORDS Pathologic calcification; Subscapularis; Arthroscopes

患者,女性,64岁,以左肩部疼痛伴活动受限6月余入院。追问病史,患者有左肩关节剧烈疼痛病史,持续2~3d,自行口服镇痛药后有所缓解。查体:左肩关节前方喙突区域明显压痛。肩关节前屈100°,外展90°,内旋仅能触及同侧髁骨。Job试验阴性,Lift-off试验无法进行,压腹试验阳性。手术前后影像学资料见图1。其中术前左肩关节X线提示左肱骨头前方可见不均匀高密度影(图1a)。进一步行CT

检查提示:左肩关节小结节前方可见不均匀高密度团块影,大小21.4mm×21.9mm(图1b),厚度约8.5mm(图1c)。三维CT显示肱骨前方可见圆形片状不均匀钙化影(图1d)。行MRI检查提示:左肩关节肩胛下肌止点前方可见不均匀圆形低信号影,其内可见混杂高信号,长20.7mm(图1e),宽17.6mm(图1f)。超声检查提示:肩胛下肌止点上方可见椭圆形囊性肿物,长24.5mm,宽9.6mm,其内可见液性低回声(图1g)。门诊医生建议患者使用非甾体类抗炎药物止痛,局部热敷治疗。患者自述6个月以来一直行非甾体抗炎药物治疗及局部理疗,症状缓解不

通讯作者:徐鹏 E-mail:252316910@qq.com
Corresponding author:XU Peng E-mail:252316910@qq.com

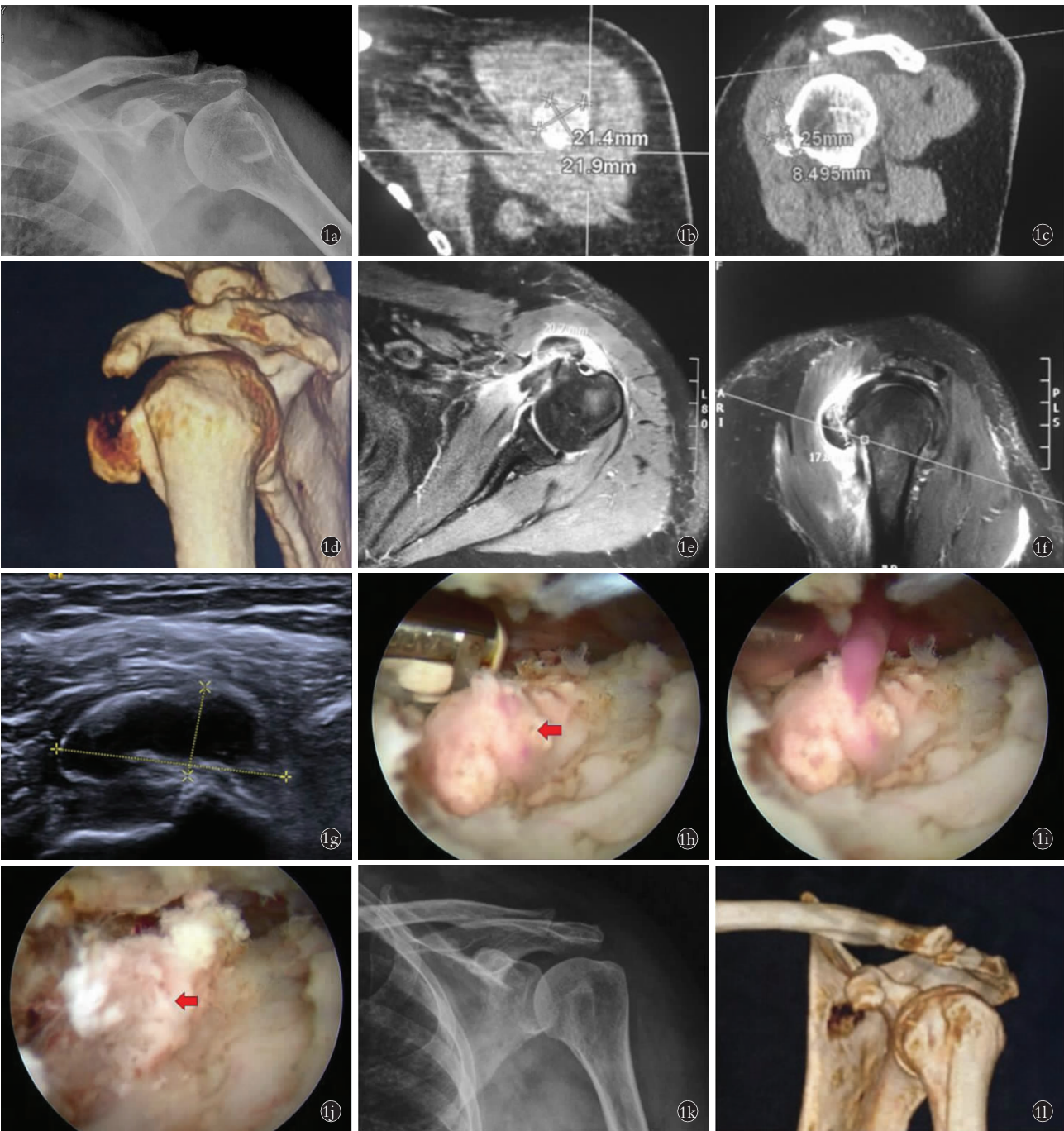


图 1 患者，女，64 岁，左肩部疼痛伴活动受限 6 个月 **1a**. 术前 X 线片示肱骨头前方不均匀高密度影 **1b**. CT 片测量钙化灶表面大小 21.4 mm×21.9 mm **1c**. CT 片测量钙化灶厚度为 8.5 mm **1d**. CT 三维重建显示肱骨前方可见圆形片状不均匀钙化影 **1e**. MRI 可见肩胛下肌止点前方不均匀圆形低信号影，长 20.7 mm **1f**. MRI 可见肩胛下肌止点前方不均匀圆形低信号影，宽 17.6 mm **1g**. 超声提示肩胛下肌囊性钙化影，长 24.5 mm，宽 9.6 mm **1h**. 红色箭头所指为肩胛下肌滑膜侧红色钙化灶 **1i**. 钙化灶内部红色血性内容物流出 **1j**. 箭头所指为钙化灶囊壁 **1k**. 术后复查 X 线未见钙化灶 **1l**. 术后复查 CT 三维重建，小结节前方钙化灶彻底清除

Fig.1 Female, 64-year-old, left shoulder pain with limited movement for 6 months **1a**. Preoperative X-ray showed an uneven high density shadow was in front of the head of the humerus **1b**. The size of calcification foci measured on CT was 21.4 mm×21.9 mm **1c**. The thickness of calcification foci measured on CT was 8.5 mm **1d**. The 3D-CT showed the uneven calcification in the shape of a circular plate in front of the humerus **1e**. In T2WI, an uneven round low signal mass was in front of the subscapularis with a length of 20.7 mm **1f**. In T2WI an uneven round low signal mass was in front of the subscapularis with a width of 17.6 mm **1g**. Ultrasonography showed the cystic calcification shadow above the subscapularis, about 24.5 mm long and 9.6 mm wide **1h**. The red arrow showed a red calcification at the synovial side of the subscapularis muscle **1i**. The red bloody contents of the calcification foci flowed out **1j**. Red arrow showed calcified cystic wall **1k**. No calcification was seen from postoperative X-ray **1l**. The calcification was completely removed from 3D-CT scan

明显,严重影响日常生活及工作。门诊医生建议患者采用体外冲击波治疗,患者因路途遥远及治疗时间较长等原因拒绝。进一步建议患者超声引导下穿刺治疗,当患者得知钙化灶较大、无法彻底清除时,选择入院行关节镜手术治疗。采用全身麻醉,沙滩椅位,手术采用 30° 关节镜,首先建立肩关节后侧入路,探查盂肱关节,在内旋肩关节的情况下仍然无法探查到钙化灶。接着建立肩峰下间隙入路,探查见肩峰下滑囊增厚,建立肩峰下外侧操作通道,清理肩峰下滑膜,使肩峰下视野清晰,给予肩峰成形。转移镜头至肩峰下外入路,进一步转移镜头至三角肌和肩胛下肌间隙,建立操作通路,清理增生滑膜,配合内旋患肢,可以探及肩胛下肌滑膜侧淡红色钙化灶(图 1h)。进一步探查钙化灶可见淡红色血性内容物自行流出(图 1i),清除钙化灶内部液体后送检囊壁(图 1j)做病理,出血点用等离子射频止血,探查见肩胛下肌肌腱整体完整。撤除关节镜器械并缝合手术切口。术后复查患肢肩关节 X 线、CT 证实钙化灶已完全切除(图 1k-1l)。病理回报:滑膜内见钙盐沉积,局部伴巨细胞反应。术后患肢给予前臂吊带固定,并于术后第 2 天开始被动前屈、外旋练习,程度以不引起疼痛为限。术后 6 周去除前臂吊带,并且嘱患者开始主动锻炼上举及外展。术后 1 年,患者关节恢复活动度,能够完成日常生活自理及办公室常规工作。

讨论

肩袖钙化性肌腱炎是引起肩关节疼痛的主要原因之一,主要病理为肩袖肌腱的钙盐沉积,其病因考虑为肩袖肌腱损伤后的营养不良性钙化。该病发病率为 2.7%~20%。好发于 30~60 岁人群,女性患者居多(60%),主要累及于冈上肌(50%),肩胛下肌最少见(3%)^[1]。本例患者女性,64 岁,发病年龄及性别符合文献描述,累及肌腱为肩胛下肌,属于钙化性肌腱炎中最少见的类型。

钙化性肌腱炎是以细胞介导腱细胞化生为软骨细胞,而后在肌腱中形成钙化灶,其后在多核巨细胞吞噬作用下进行肌腱的重塑,最后恢复为正常肌腱的一类自限性疾病。疾病发展分为 3 个时期:钙化前期,钙化期(分为形成期、静止期、重吸收期),钙化后期。还有将疾病发展分为 4 个时期:钙化前期,形成期,重吸收期,恢复期。其中钙化前期是以纤维软骨化生为主要特点,形成期是以钙盐沉积为主要特点形成稳定的钙化灶。上述 2 个时期患者可无明显症状,病程长短不一。重吸收期是以钙化边缘血管再生及单核巨噬细胞浸润为主要特点。本例患者钙化灶处于重吸收期,与文献中表述不同的是钙化内部为液性,关节镜下显示为淡红色液体钙化,而钙化的重

吸收是从钙化边缘开始。

钙化性肌腱炎的主要临床表现为自发性难以忍受的剧烈疼痛,常见于清晨,主要发生在钙化灶重吸收早期,剧烈的疼痛可引起恶心、呕吐等症状并伴随心率、血压升高,患者可出现焦虑、失眠等症状,严重者出现自杀倾向。此时患者需要大量非甾体抗炎药物及镇痛药物来缓解疼痛,恢复一般状态。急性疼痛期一般持续 3~7 d,根据钙化灶的位置、大小、质地、形状等因素,部分患者疼痛完全缓解,部分患者转入慢性疼痛。本例患者病程为 6 个月,有急性疼痛发作病史,考虑疼痛长时间未见缓解与钙化灶较大有关。

影像学检查对钙化性肌腱炎的诊断具有重要意义,主要的检查手段有 X 线、CT、MRI 和超声,其中 X 线检查为最基础的检查手段。X 线检查可发现冈上肌腱部位的钙化灶,但无法诊断肩胛下肌钙化。CT 检查对于钙化性肌腱眼病灶定位更为精确^[2]。Filippucci 等^[3]认为,肩关节超声检查敏感度比射线检查更高。MRI 检查对于组织病变具有更高的敏感度,95% 患者钙化灶在 T1WI 上显示为低密度^[4]。Bosworth^[5]根据钙化灶直径大小将钙化灶分为小型(<5 mm),中型(5~15 mm),大型(>15 mm)。Uthoff 等^[6]依据钙化灶形态将钙化灶分为疏松(急性期),致密(亚急性期或慢性期)。Gärtner 等^[7]依据钙化灶形态将钙化灶分为:Ⅰ型,外形尖锐质地紧密;Ⅱ型,外形尖锐质地不均匀或边界不清质地均匀;Ⅲ型,透明云雾状。Farin 等^[8]依据钙化灶在超声下形态将钙化灶分为:Ⅰ型,单一巨大钙化灶;Ⅱ型,多发小型钙化灶;Ⅲ型,少量小型钙化灶。Loew 等^[9]依据钙化灶 MRI 表现将钙化灶分为:A 型,单一钙化灶质地紧密、均匀,边界清晰;B 型,分裂的钙化灶质地均匀,边界清楚;C 型,弥漫低信号,边界不清。根据以上分型,本例患者 Bosworth^[5]分型为大型,Uthoff 等^[6]分型为疏松(急性期),Gärtner 等^[7]分型为Ⅲ型,Farin 等^[8]分型为Ⅰ型,Loew 等^[9]分型为 C 型。

钙化性肌腱炎治疗方式有很多,分为保守治疗和手术治疗。其中保守治疗是首选治疗方法,包括非甾体抗炎药物治疗、超声引导下局部注射治疗及体外冲击波治疗。通常,在钙化性肌腱炎急性发作时给予非甾体抗炎药物来缓解疼痛,在疼痛缓解后给予肩关节被动活动预防肩关节粘连。本例患者在急性期自行服用镇痛药物缓解疼痛,症状有所缓解,但仍有局部疼痛及活动受限等症状。体外冲击波自 1990 年开始应用于医疗领域。Daecke 等^[10]报道了外冲击波治疗钙化灶的长期随访,其中 70% 达到满意效果,20% 需进行手术治疗。本例患者保守治疗的 6 个月内未行体外冲击波治疗,门诊医生曾建议患者采用

体外冲击波治疗,患者因路途遥远及治疗时间较长等原因直接选择手术治疗。关于急性期局部给予激素注射缓解疼痛目前尚存在争议。Uhthoff 等^[11]研究表明具有积极作用。Vignesh 等^[12]对该方法进行系统回顾,大部分文献循证等级较低(Ⅳ级),所以该方法的治疗效果仍需进一步证明。本例患者就诊时医生建议行超声引导下穿刺治疗,当患者得知钙化灶较大、无法彻底清除时,选择入院行关节镜手术治疗。经过 3~6 个月保守治疗仍无法缓解症状的情况既为保守治疗无效^[13],建议进行手术清除。目前,采用关节镜下清除慢性期钙化灶是手术治疗的首选方式^[12,14]。但关于钙化灶是否彻底清除,清除钙化灶后是否采用肩袖缝合仍然争议很多。Ark 等^[15]报道了 23 例患者进行钙化灶部分清除,得到满意治疗效果。Jerosch 等^[16]指出钙化灶应完全清除,但无须进行肩袖修复。Porcellini 等^[17]认为应完全清除钙化灶,依据肩袖缺损大小给予肩袖缝合,缝合后的肩袖能防止愈合后的再次断裂。目前的共识是:当保守治疗 6 个月以上仍无法缓解症状的患者建议手术治疗^[12,14]。本例患者保守治疗 6 月余,症状明显,手术采用关节镜下钙化灶完全清除,但钙化灶大部分位于肩胛下肌表面,故无须进行缝合,术后效果满意。

肩胛下肌钙化性肌腱炎是肩关节钙化性肌腱炎中最少见的,钙化灶直径>15 mm 肩胛下肌钙化性肌腱炎更罕见。该病变可通过手术治疗,预后较好。

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