

多发性大动脉炎血管内介入治疗和开放手术现状

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【摘要】 多发性大动脉炎或称 Takayasu 动脉炎(TA),是累及主动脉及其分支的肉芽肿性炎症,最终会侵及大动脉管壁全层,多数情况下会造成动脉狭窄甚至闭塞,出现相应器官缺血。患者通常需手术治疗,重建血运。血管旁路移植术是传统手术方式,适合长段、复杂及严重狭窄/闭塞病变患者,远期通畅率较好;血管内介入治疗作为开放手术可替代术式,具有微创优势,适合手术风险较高患者,近期疗效较为理想,但远期再狭窄率较高。因此,手术治疗 TA 时应结合患者全身情况及病变特点,选择个体化治疗方案。

【关键词】 多发性大动脉炎;血管内介入治疗;开放手术

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Endovascular interventional therapy and open surgery for Takayasu arteritis: its present situation

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【Abstract】 Multiple arteritis, known as Takayasu arteritis (TA), is a granulomatous inflammation involving the aorta and its branches, which eventually invades the entire wall of the large arteries, and in most cases it can cause stenosis or even occlusion of the arteries, resulting in ischemia of the corresponding organs. Patients usually need surgery to rebuild their blood supply. Vascular bypass grafting is a traditional operation, which is suitable for patients with long, complicated and severe vascular stenosis or occlusion, and this operation usually carries a better long-term patency rate of blood vessels. Endovascular interventional therapy can be used as an alternative to open surgery as it has a minimally-invasive advantage and is suitable for patients with higher risk of surgery, its short-term curative effect is ideal, but its long-term restenosis rate is higher. Therefore, individualized therapeutic regimen should be formulated according to patient's systemic conditions and pathological features. (J Intervent Radiol, 2019, 28: 599-602)

【Key words】 Takayasu arteritis; endovascular interventional treatment; open surgery

多发性大动脉炎或称 Takayasu 动脉炎(TA),是累及主动脉及其分支血管,以及肺动脉和冠状动脉的慢性肉芽肿性炎症^[1]。全世界不同地区均有发病,年发病率为 1.2~2.6/百万,东南亚、中南美及非洲地区相对较高;女性患者多见,多在 20~30 岁发病^[2]。TA 与自身免疫相关,病因目前尚不明确^[3]。典型病程可分为非特异炎症反应期、血管炎症期和炎症终末期^[4]。炎症反应最先累及动脉管壁外膜,后逐渐蔓延至血管壁全层,炎症终末期随着血管壁增厚及纤

维化,会出现管腔狭窄甚至闭塞,导致相应器官缺血^[5]。炎症活动期以药物治疗为主,尽早控制炎症反应,炎症导致相应器官缺血时手术治疗就成为重要手段^[6],多选择在炎症控制后或炎症终末期。血管旁路移植术作为传统治疗方法,效果满意。随着近年介入技术成熟,血管内介入治疗已成为部分病变开放手术的可替代术式^[7]。

1 TA 治疗

1.1 药物治疗

药物治疗旨在控制炎症反应,减少对血管壁结构破坏。对活动期 TA 患者,首选大剂量糖皮质激素治疗,病情大多会得到有效缓解^[3]。但部分患者在激素减量过程中出现病情复发和激素依赖,甚至激素

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治疗无效^[8]。Ohigashi 等^[9]研究显示 34% TA 患者初次糖皮质激素治疗时较为敏感,且在维持剂量时炎症长期缓解,但仍有 66%患者对激素不敏感或在减量过程中炎症复发;联合应用免疫抑制剂如甲氨蝶呤和环磷酰胺,或生物制剂如夫英利昔单抗、托珠单抗后炎症得到有效缓解。抗血小板药物作为二线用药也同样重要。de Souza 等^[10]研究表明,长期小剂量抗血小板治疗能降低 TA 患者缺血事件发生率。Wang 等^[11]研究表明 TA 患者血小板和纤维蛋白原功能增强,尤其在活动期,因此应注重抗血小板治疗。

1.2 手术治疗

动脉狭窄是 TA 最常见病变类型。Arnaud 等^[12] meta 分析 TA 患者影像学表现,84%患者有动脉狭窄病变,72%患者血管壁增厚,51.2%患者有动脉闭塞病变。慢性炎症期予手术治疗可明显提高患者预后。Miyata 等^[13]回顾性分析 106 例 TA 患者预后,结果显示手术治疗能提高 III 期患者长期存活率。手术治疗基本适应证:动脉狭窄导致相应缺血(如心脏和脑缺血、下肢间歇性跛行、腹腔动脉和肠系膜动脉狭窄缺血、肾动脉狭窄所致难治性高血压等)以及严重主动脉反流、主动脉狭窄、有破裂风险的动脉瘤^[5-6,14-16]。

手术治疗应谨慎选择。不论是血管内介入手术还是开放手术,术后再狭窄率均较高^[17]。不同研究报告介入手术后远期再狭窄率为 37%~64.5%,开放手术为 12.5%~46.2%^[4,17-18]。术后并发症发生率与炎症活动性显著相关,活动期患者术后并发症发生率、再手术率显著高于慢性炎症期患者^[5,13,19]。因此术前评估疾病活动性显得尤为重要,需采用血管外科、风湿免疫科及影像科等多学科模式,从临床表现、影像学表现及血清生物学标记物等方面作出评估^[20]。

2 介入手术与开放手术对比

不同临床中心手术治疗 TA 比例不一,为 12%~70%。既往文献报道显示,人工血管/自体血管旁路移植术等开放手术治疗有较高的术后通畅率,处理复杂、长段、闭塞病变具有优势,但创伤大,围术期病死率及并发症发生率较高;球囊成形术和支架植入术等介入治疗具有微创、可重复特点,对简单、短段病变疗效可靠,但远期再狭窄率和再手术干预率较高^[4,7,17]。由于大多数研究报告为回顾性分析,时间跨度较长、病例数较少并将不同位置动脉病变混杂作评估,其结果时常偏差较大。尤其是 TA 累及

不同部位时临床表现完全不同,预后也有差异。

2.1 累及弓上血管病变治疗

TA 累及弓上血管比例较高,其病变狭窄会造成脑缺血、上肢缺血。Arnaud 等^[12]综合分析 82 例 TA 患者影像学检查结果,91%患者弓上血管至少有 1 支受累及。Duarte 等^[21] meta 分析 3 226 例 TA 患者,其中累及弓上血管病变患者短暂性脑缺血发作(TIA)或脑卒中发生率为 15.8%,有较高致残率和病死率。就诊于本中心 TA 累及弓上血管患者颈动脉彩色超声检查常提示颈总动脉(94%)、锁骨下动脉(82.1%)受累,而颈内动脉(15.5%)、颈外动脉(2.4%)受累较少,且多在血管开口部位。这表明可予以升主动脉-锁骨下动脉旁路移植术和颈动脉旁路移植术,但有较大创伤,甚至需开胸手术,术后恢复慢,围术期并发症发生率高,再狭窄率为 12.5%~53.3%^[4,15]。近年血管内介入治疗短段和简单病变也取得较好效果,有创伤小、术后恢复快特点,但再狭窄率较高(32.8%~53.2%)^[4,15]。接受颈动脉内膜剥脱术治疗的个别简单病变患者疗效较差。既往文献报道支架植入和球囊扩张治疗弓上血管病变的效果差别不大,但本中心经验是支架植入远期效果并不理想,可能是支架对血管壁持续刺激促进炎症反应,使管腔更易再狭窄的缘故。值得注意的是,弓上血管病变手术治疗后颅内血流灌注短时间增加,部分患者会出现过度灌注综合征,甚至脑出血。因此除了围术期血压管理外,还应采取分组血管开通措施,后期评估脑缺血情况后再确定二期手术,以减少过度灌注综合征^[22-23]。

2.2 累及肾动脉狭窄治疗

TA 所致肾动脉狭窄患者不仅表现为药物难治性高血压,还会出现肾功能障碍、心力衰竭等表现^[24]。血管内介入术和血管旁路移植术均可用于治疗症状性大动脉炎相关肾动脉狭窄,可有效控制患者血压,减少降压药物剂量及种类,改善肾功能及心力衰竭患者心脏功能^[25]。球囊成形术疗效较好,远期通畅率满意^[26];支架成形术一般作为球囊成形失败及出现夹层或动脉破裂时补救措施。两者疗效基本相近,但支架成形术再狭窄率较高^[27]。Park 等^[28]分析比较单纯球囊扩张和支架成形术,术后 1、3、5 年通畅率分别为 55.6%、33.3%、33.3%和 88.9%、66.7%、55.6%,再狭窄率分别为 8%、65%。Jeong 等^[27] meta 分析 152 例次球囊扩张和 82 例次支架植入结果,支架植入再狭窄率明显较高,但球囊扩张术并发症发生率相对较高。血管旁路移植术同样有较好疗效

及术后通畅率,但创伤大,再狭窄率甚至高于球囊扩张术,故不作为首选术式^[26]。

2.3 累及主动脉病变治疗

TA累及主动脉时会出现主动脉瘤、夹层等病变,主动脉瘤在TA患者中约占4%^[29]。动脉管壁炎性反应较重时造成管壁损伤变薄弱,血管重塑过程中发生动脉瘤^[1]。升主动脉瘤较为常见,致命危险主要为瘤体破裂和主动脉瓣膜功能障碍所致心力衰竭^[29]。采用主动脉置换术还是介入治疗主要视病变形态及位置,时机选择主要视瘤体破裂风险,不只局限于疾病是否在活动期,且术后需长期随访观察^[29-30]。主动脉瓣返流往往造成心力衰竭,原因为主动脉根部扩张导致动脉环扩张,而炎症基本不会累及瓣膜^[16];瓣膜置换术或主动脉根部置换术等可取得良好疗效^[31]。主动脉狭窄较为少见,主要表现为上肢高血压和狭窄以远缺血,旁路移植术和血管内介入术等术式选择主要取决于狭窄位置及复杂程度等,各自疗效也较满意^[32-33]。主动脉夹层极为少见,主要与高血压和血管壁炎性反应相关。Yang等^[34]回顾分析10例TA发生主动脉夹层患者(伴有高血压),予积极控制血压,并根据夹层形态及血供,其中1例接受介入治疗,9例保守观察(1例死亡),均定期复查CTA。

2.4 累及冠状动脉和肺动脉病变治疗

TA累及冠状动脉并不罕见(10%~30%),冠状动脉开口位置最常见^[35]。患者主要表现为心肌缺血,对年轻患者应引起重视。Yang等^[36]在一项纳入31例TA累及冠状动脉患者研究中提出,活动期患者冠状动脉旁路移植术较支架成形术更具优势。TA累及肺动脉极为罕见,主要表现为肺动脉高压,血管内介入治疗创伤较小,疗效确切。李庆雪等^[37]报道采用血管内介入术治疗10例TA所致肺动脉狭窄患者,术后肺动脉高压明显缓解,动脉氧饱和度升高显著,右心功能改善。肺动脉旁路移植术仅见个案报道,有较高并发症发生率^[38]。

3 结语

TA需要多学科综合治疗,影像学全面评估患者主动脉及其分支。随着新生物制剂应用于临床,激素抵抗或依赖及免疫抑制剂治疗不理想患者预后得到较好改善^[9]。PET-CT有助于早期诊断和评估疾病活动性^[39]。手术治疗选择需结合患者全身状况和病变部位,对非活动期患者手术治疗可明显提高生存质量。开放手术创伤较大,但术后远期疗效满

意;血管内介入治疗作为可替代术式,有微创、可重复特点,尤其是对肾动脉狭窄患者,球囊扩张远期效果较为满意^[28]。两者远期疗效差别大的原因,主要在于血管旁路移植手术时是跨过病变部位,而介入手术时直接在病变部位操作。病变部位操作损伤可能促进管壁炎性反应,使得介入手术远期效果相对较差。支架植入术后支架对管壁持续刺激可能进一步促进管壁炎性反应。因此,介入治疗时应注重减少对病变管壁进一步损伤。目前药物涂层球囊治疗下肢动脉狭窄取得了满意效果^[40],但治疗TA尚需进一步研究。TA手术治疗后疾病进展较常见,需长期监测,必要时再次手术干预^[41]。

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