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椎动脉夹层致脑梗死 4 例病例报道并文献复习 *

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摘要 目的:分析椎动脉夹层(VAD)的临床特点,探讨其与脑梗死的关系。**方法:**回顾性分析 4 例 VAD 致脑梗死患者的临床资料,并结合文献复习。**结果:**本组 4 例 VAD 患者中,2 例患者有高血压病史,1 例有高血压病相关家族史,1 例无相关病史或家族史;3 例患者有 10 年以上的吸烟史;4 例患者均表现为头晕、恶心呕吐、行走不稳等后循环缺血症状,其中 2 例有显著的头枕部痛;4 例患者均经 DSA 确诊为 VAD。3 例患者行抗血小板药物治疗,1 例行血管内介入治疗。3 例患者康复出院;1 例治疗后仍有显著的头枕部痛症状,拒绝进一步治疗予出院。**结论:**脑梗死患者有高血压病及长期吸烟史,表现为头晕、头枕痛等后循环缺血症状,应考虑 VAD 的可能。DSA 是目前诊断 VAD 的金标准,及时规范的治疗可改善 VAD 患者的预后。

关键词:椎动脉夹层;脑梗死;临床特点

中图分类号:R743.9; R653 **文献标识码:**A **文章编号:**1673-6273(2019)01-79-04

Cerebral Infarction Caused by Vertebral Artery Dissection (Report of 4 Cases and Literature Review)*

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ABSTRACT Objective: To analyze the clinical characteristics of vertebral artery dissection (VAD), and investigate the relationship between VAD and cerebral infarction. **Methods:** The clinical data of 4 cases of cerebral infarction caused by VAD were retrospectively analyzed and the relative literature were reviewed. **Results:** Among 4 cases, 2 cases had hypertension,1 had family history of hypertension and 1 had no relative condition. 3 cases had been smoking for more than 10 years. All cases mainly presented with symptoms of posterior circulation ischemia and 2 had serious occipital headache. 4 cases were all diagnosed by DSA. 3 cases were treated with antiplatelet drugs and 1 case was treated with intravascular interventional therapy. 3 cases recovered and 1 case with occipital headache refused further treatment. **Conclusions:** Cerebral infarction patients with history of hypertension and smoking,presented with symptoms of posterior circulation ischemia may have VAD and DSA is currently the gold standard for its diagnosis.

Key words: Vertebral artery dissection; Cerebral infarction; Clinical characteristics

Chinese Library Classification(CLC): R743.9; R653 Document code: A

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前言

椎动脉夹层(vertebral artery dissection,VAD)是指因动脉内膜破裂，血液从破裂处流入血管内膜 - 中膜之间或血管中膜 - 外膜之间所引起的血管病变,临床上较为少见,年发病率约为 1～1.5/10 万,是中青年(18～45 岁)缺血性脑卒中的常见原因之一,占 45 岁以下的缺血性脑卒中的 10 %～20 %[1]。VAD 的临床症状及体征并不具有特异性，导致其早期发现及诊断困难，目前 DSA 是其诊断的金标准。脑梗死是 VAD 主要的并发症之一,有较高的致残及致死危险,能否及时处理血管夹层很大程度影响了其预后。近几年有关颈椎按摩与自发性 VAD 的病例相继被报道,但其间关系至今仍未有定论。本文结合 4 例 VAD 致脑梗死患者的临床资料,系统性回顾相关文献,对该病的临床特点进行复习,以期提高期临床诊断正确率。

1 资料与方法

1.1 一般资料

选择 2016 年 1 月至 12 月我院收治的 VAD 致脑梗死 4 例,其中男 3 例,女 1 例,年龄 33～71 岁,平均 49.5 岁。2 例患者有高血压病史,1 例有高血压病家族史,1 例无高血压病或相关家族史;3 例患者有 10 年以上吸烟史;1 例有颈椎复位按摩史。4 例均有头晕、恶心呕吐、行走不稳等后循环缺血症状,其中 2 例有显著的头枕部持续性牵扯样痛。4 例患者均经 DSA (图 1)诊断为颅外段 VAD。见表 1。

1.2 治疗方法

3 例患者予抗血小板药物及对症支持治疗;1 例予支架辅助下弹簧圈栓塞术：全麻下行右股动脉穿刺术，在 6 mm*20 mm 的 Solitare 支架半释放状态下，在夹层动脉瘤腔内先后引

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表 1 4 例患者的临床资料、治疗及预后

Table 1 Clinical information, treatment and prognosis of 4 cases

	Sex	Age	Main symptoms	Past history	Location of VAD (DSA)	Treatment	Prognosis
1	M	33	Dizziness Occipital headache Walking unsteadily Nausea Vomiting	History of upper respiratory tract infection History of cervical massage Smoking	V3 section on both sides	antiplatelet drugs	Recovery
2	F	42	Dizziness Occipital headache Walking unsteadily Blurred vision	Family history of hypertension	V2 section on both sides	antiplatelet drugs	Left occipital headache
3	M	52	Dizziness Walking unsteadily Nausea Vomiting	Hypertension (under control) Smoking	V4 section on the right side	intravascular interventional therapy	Recovery
4	M	71	Dizziness Walking unsteadily Barylalia	Hypertension (uncontrolled) Smoking	V3 and V4 section on the left side	antiplatelet drugs	Recovery

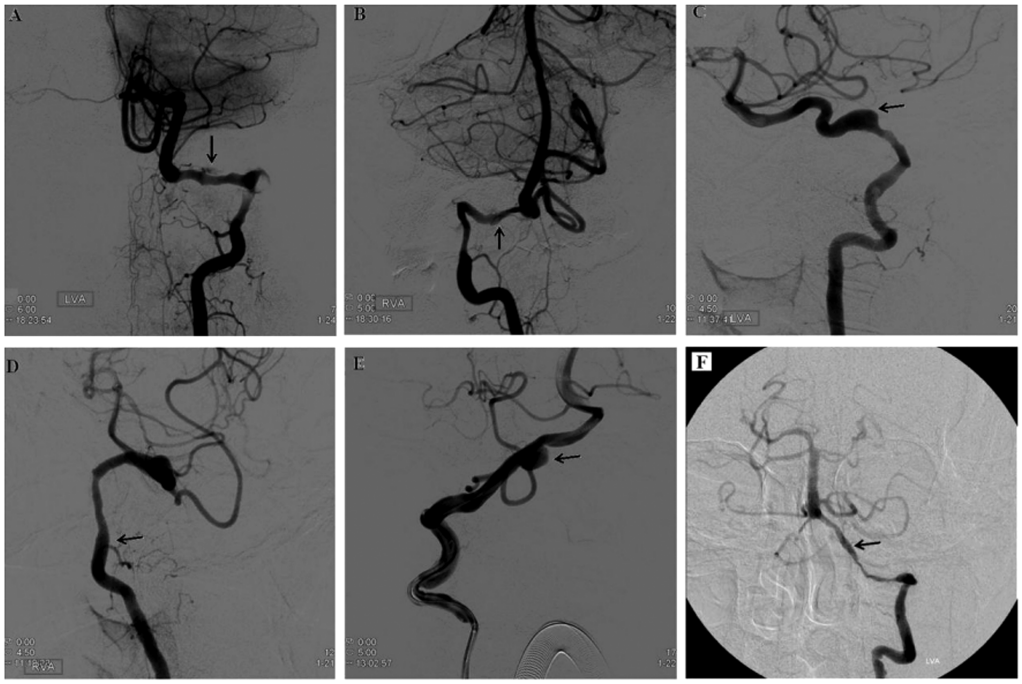

图 1 4 例患者夹层动脉的 DSA 图像

Fig.1 DSA images of the dissecting arteries in 4 cases

A, B(case 1): Irregular stenosis and tumor-like expansion can be seen on the V3 section of bilateral vertebral artery. Part of contrast medium infiltrates into the dissection and "double lumen sign" is clear. C, D(case 2): V2 segmental aneurysm of both sides. E(case 3): V4 segmental aneurysm of right vertebral artery. F(case 4): V3 and V4 segmental aneurysm of left vertebral artery.

入 6 mm× 18 cm、4 mm× 12 cm、3 mm× 10 cm、3 mm× 8 cm、3 mm× 8 cm 五枚铂金弹簧圈栓塞，其后完全释放支架，最后造影见夹层动脉瘤腔基本闭塞，支架位置良好，载瘤动脉及邻近血管未受影响。

2 结果

3 例经抗血小板药物治疗者中，2 例康复出院，1 例仍有显著头颈痛，患者拒绝进一步治疗予出院。3 例均未行长期随访。1 例行血管内治疗者术后症状消失，7 月后复查 DSA 示：动脉瘤内弹簧圈在位，无造影剂进入，瘤颈无明显残留，载瘤动脉内支架通畅。

3 讨论

VAD 根据发生位置可分为颅外段(V1～4)及颅内段(V5)夹层,前者由于动脉中膜及外膜较厚,含弹性纤维多,夹层形成后易从内弹性膜向内进展,导致动脉狭窄或闭塞,表现为椎基底动脉缺血及后循环梗塞;后者因动脉中膜及外膜较薄,含弹性纤维少,夹层形成后易从中膜向外膜进展,导致血管瘤样扩张或破裂,临床症状以 SAH 为主。夹层动脉瘤一旦破裂引起了 SAH,那么该处病变的再出血率将达到 30 %,有很高的致死率[2]。极少数患者同时伴有缺血和出血表现。本文中,4 例脑梗死患者夹层发生的位置分别为两侧 V3 段,两侧 V2 段,右侧 V4 段,左侧 V3 及 V4 段,均属颅外段,与既往文献报道的规律符合。

VAD 依据病因又可分为自发性和外伤性。自发性 VAD 主要发生在中青年,与遗传和环境因素等有关,如动脉粥样硬化、高血压、高血脂、吸烟、口服避孕药、感染、肌纤维发育异常、抗胰蛋白酶缺乏、烟雾病及某些特殊疾病(如马凡综合征,埃勒斯综合征),而性别因素在 VAD 的发病中无显著差异[3,4]。因亚洲人颅内动脉粥样硬化发生率高,故相应血管夹层发生率高,这也是国内报道的 VAD 症状以 SAH 为主,而西方报道的以后循环缺血症状为主的原因。本文 4 个病例中,3 例有 10 年以上吸烟史,2 例有高血压病史,且血压未控制的病例 4 相较其他 3 例血压控制良好及无高血压病史者临床症状严重,查体有明显的下肢肌力减弱及小脑性共济失调症状。外伤性 VAD 即当颈部发生过度的屈曲,伸展或旋转时损伤到椎动脉,常见的原因有机动车事故,运动损伤和颈椎按摩等。Thomas 等人[5]的一项回顾性研究示:47 例 55 岁以下的颈动脉夹层患者中,64 %有近期的颈部轻微损伤。近几十年来,各地报道的有关颈椎按摩后发生 VAD 的病例逐渐增多,于是有学者对两者间的联系做了大量研究[6-10],得出的结论均为大部分 VAD 患者因初期的头颈痛症状接受颈部按摩治疗,可能因此加重了原来的病情。尽管颈椎按摩与 VAD 之间的因果关系很难被证实,但 Biller 等人[11]仍建议颈椎按摩师在给病人实施治疗前应充分告知可能的危险,并且自身也要慎重操作。当然,VAD 两种病因的区分并不绝对,一般都是在血管原有的慢性损伤基础上,突发颈部的外伤导致了 VAD 的发生[5]。本文的病例 1 有明确的近期颈椎复位按摩史,且为中青年,除吸烟外,不具备长期血管受损的高危因素,笔者推测其 VAD 的发生与颈椎按摩史有莫大关系。

VAD 患者常以头晕、头颈痛为主要临床表现,症状不典型。头颈痛症状是分布在相关血管上的神经受牵拉损伤所致,因此疼痛部位与血管夹层部位密切相关,椎基底动脉系统的夹层即对应单侧突发的颈部和枕部疼痛[12]。其次,脑梗死及 SAH 也是 VAD 患者较为常见的临床表现[13,14]。Thomas 等人[15]一篇关于颈动脉夹层的文章中指出:61 %的颈动脉夹层患者会出现脑梗死。大脑后循环的梗死主要发生在侧髓质及小脑前 / 后下动脉支配区域,脑梗死很少发生在小脑上动脉支配区域,脑桥、中脑及丘脑的梗死也极为罕见。大脑中动脉支配区域的脑梗死主要是由于血管栓塞机制。分水岭梗死较为少见,通常是由于血管血流动力学的突然改变而侧枝循环还未建立引起,与动脉粥样硬化等血管疾病导致慢性的血流动力学改变截然不同。VAD 引起的脑梗死常见的有延髓背外侧综合征,其主要表现为:①交叉性感觉障碍;②迷走神经核、疑核和网状结构受损引起的呕吐、呃逆、吞咽和发音困难;③交感神经症状,Horner 氏综合征;④小脑症状,如平衡失调,眼球震颤。本文中,4 例患者均主要表现为头晕、头枕部痛、恶心呕吐、站立不稳等后循环缺血症状,是相对典型的 VAD 致脑梗死的临床表现。若患者症状局限于头晕头痛,临床上常被误诊为其他肌肉骨骼疾病或偏头痛[5]。

VAD 的诊断需要结合临床症状及影像学检查,同时排除其他血管疾病。如果症状较轻或并不典型则首选非侵入性的检查。超声影像检查具有无创,操作简便和费用低的优点,可作为其筛查和复查手段。据报道,其诊断 VAD 的灵敏性可达 75 %～95 %,常见的征象即血管病变处显著的狭窄或梗阻[16]。但其易受操作者技术的影响,且不易发现颅底或横突孔内的病变。DSA 目前是椎动脉夹层诊断的金标准,可见椎动脉呈不规则狭窄,管腔呈线珠状,多表现为偏心性动脉瘤样扩张并近端或 / 和远端血管狭窄,双腔征极少见,是最典型且具诊断意义的表现。但 DSA 不能发现壁间血肿,费用高且具一定创伤性,因此不作为常规推荐。MRI 及 MRA 对于发现壁间血肿敏感,结合 DSA 可以提高诊断准确率。在大部分血管病变检查中,CTA 可以代替 DSA,其在显示病变的空间结构上优于 DSA,但 CTA 产生的射线对人体有一定危害。若患者存在其他影像学检查的禁忌症,可做 CTA 协助诊断。然而,DSA、MRA 及 CTA 虽能显示血管腔内的情况,但不能鉴别各种血管疾病,因为不同的血管病理机制可能导致相似的管腔缺损改变。高分辨率 MRI 既能清晰得显示壁间血肿、血管偏心性增厚等夹层典型特征,又能看到假腔入口、内膜瓣及小血管分支开口等细微结构,为血管内介入治疗方式的选择提供了重要的影像学参考依据[17]。但其由于检测时间较长及设备要求高等原因并未被普及。

虽然 VAD 有一定自限性,但自愈率低且病变血管梗阻或破裂后果严重,大部分学者建议一经发现就积极干预,治疗可有内科、外科及介入治疗。由于 VAD 动脉瘤无真正的瘤颈,且位于颅后窝,延髓腹侧或腹外侧,外科手术治疗时暴露及夹闭困难,手术并发症多,目前已很少开展。一般未破裂动脉瘤首选内科治疗,已出血性破裂的夹层动脉瘤再出血率达 20 %～70 %,死亡率达 46 %,大多发生在初次破裂后 24h 内,应尽快采取介入治疗[18]。内科治疗主要是溶栓,包括抗血小板和抗凝药物的运用。中国 2010 年缺血性脑卒中二级预防指南及美国 2011 年最新指南推荐首选抗凝治疗,3～6 个月后改为抗血小板治疗。2013 年,Sarikaya[19]等人一项相关研究的 meta 分析示抗凝药物有如下缺点:①价格远比阿司匹林类抗血小板药贵;②需要患者定期测量 INR 值,对患者依从性的要求更高;③服用后发生颅内出血的风险更大;④抗凝药物药代动力学不稳定,易受所服其他药物及食物影响。因此他主张在有可信的大样本研究证明抗凝药物优于抗血小板药物之前,后者应作为溶栓的一线药物。近年又有研究者[20]做了关于抗血小板药及抗凝药治疗颈动脉夹层预后的随机对照试验,该实验纳入了 250 名受试者,结果显示这两种药物在再出血、再中风及死亡等预后方面数据无统计学差异,并且总不良预后的概率也远小于其他观察性试验报道的相关数据,因此作者认为下一步应扩大样本数使

结论更为可靠。Zhang 等[21]认为 VAD 患者经 14 天的溶栓治疗无效就应立即采取介入治疗。介入治疗主要包括两个方面,一是椎动脉栓塞技术 (载瘤动脉近端闭塞或夹层段椎动脉闭塞),二是椎动脉重建技术(包括单支架植入术,双支架置入术,支架辅助下弹簧圈栓塞术)[22,23]。Kim 等人[24]的研究发现前者术后闭塞程度高,后者围手术期出现的并发症少,但就远期预后和复发率而言,两者间无明显差别。2015 年一篇关于椎基底动脉夹层动脉重建技术与栓塞技术比较的 meta 分析中得出的结论也与 Kim 等人的相似[25]。目前,双支架辅助下弹簧圈栓塞术是椎动脉夹层动脉瘤的理想选择。VAD 累及小脑下后动脉的病例并不少见,约占 VAD 总数的 14.62 %[26],这是由于该处形成的湍流易致动脉粥样硬化及内膜损伤[27]。小脑下后动脉是椎动脉的重要分支,是小脑和脑干血供的重要来源,其梗塞可引起延髓背外侧综合征甚至死亡。因此,在椎动脉夹层介入治疗方法的选择中,充分了解小脑下后动脉与血管病变的位置关系是至关重要的。本文的 4 个患者夹层动脉瘤均未破裂,其中 3 例采用抗血小板药物来防止血栓形成,2 例患者痊愈,1 例患者仍有显著头枕部疼痛症状但放弃进一步治疗;1 例行介入治疗者采用的是支架辅助弹簧圈栓塞术,术后短期内患者出现了头晕嗜睡等症状, 经吸氧及适当升压等对症治疗后症状很快消失,7 月后随访结果也正常。Huang 等人[28]关于颈动脉夹层介入与非介入治疗方法比较的 meta 分析示, 在东亚人群夹层动脉瘤破裂的病例中, 介入治疗的各项预后指标都明显优于非介入治疗,而在其他人群中两种治疗方法并无明显差异。目前,仍有少部分学者对介入治疗持怀疑态度,认为就目前的影像学技术不能显示完整的夹层范围,介入手术的不彻底或者对小分支的误堵可能会造成严重后果,更为先进的影像学技术有待开发来支持该治疗手段[29]。

VAD 的预后各不相同,如果夹层形成的动脉瘤未破裂,大部分有缺血症状的病人和所有无缺血症状的病人的临床结果都是可观的。老龄、累及基底动脉、双侧 VAD 和并发 SAH 等都是影响预后独立的危险因素[30]。

总之, 临床上遇到有高血压及长期吸烟史的脑梗死患者,又主要表现为头晕、头枕部痛及其他后循环缺血症状,要考虑到 VAD 的可能,经颈椎动脉 B 超、MRA、CTA 及 DSA 等影像学检查诊断明确后, 及时根据病人的个体化情况开展治疗措施,能有效改善患者预后。

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