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·病例报道·

低脊髓缺血风险胸主动脉腔内隔绝术后轻瘫诊疗1例

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Postoperative paralysis of thoracic endovascular aortic repair in patient with low risk of spinal cord ischemia: a case report

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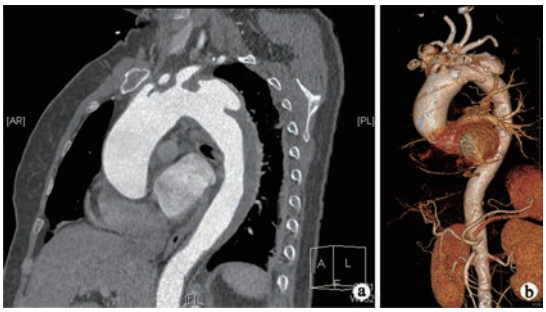
[关键词] 脊髓缺血;风险评分;胸主动脉腔内隔绝术;截瘫
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主动脉夹层起病急且病情凶险,需及时积极治疗。胸主动脉腔内隔绝术(thoracic endovascular aortic repair,TEVAR)是 Stanford B 型主动脉夹层的首选治疗方案[1]。有研究表明,对于创伤导致的主动脉夹层患者,TEVAR 较传统手术更为安全有效[2]。然而TEVAR术后仍有并发症发生风险,脊髓缺血为其术后恶性并发症之一。脊髓缺血的发生机制尚未明确,多认为与脊髓动脉灌注压较低、术中供血血管被支架隔绝等因素相关[3]。本文介绍1例在TEVAR术后发生轻瘫的脊髓缺血低风险(脊髓缺血评分1分)患者,术后经激素冲击、功能康复等治疗后症状明显缓解,现报告如下。

1 资料与方法

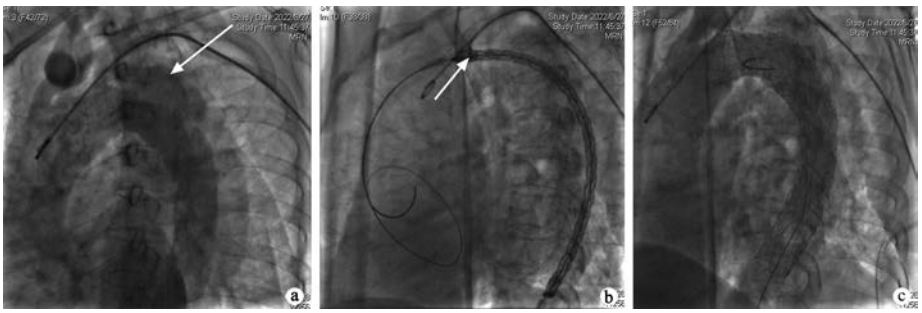
患者,女,68岁,以"突发胸背部疼痛10 h"入院。既往高血压病8年。查体:血压170/98 mmHg;剑突下压痛;肌钙蛋白、心肌酶谱及心、肺、肾功能等未见异常。CTA示:胸主动脉夹层(图1)。入院后予以控制血压及心率的相关治疗。因现阶段对于术前行脑脊液引流仍存在较大争议[4],未预防性行脑脊液引流。

2022年6月27日,患者在局部麻醉下行胸主动脉造影及胸主动脉夹层腔内隔绝术,以左侧桡动脉及右侧股动脉为入路,支架近段覆盖约T_2水平,远段约T_9水平,置入支架规格为34 mm×200 mm(图2),手术时间1 h,术中出血量约30 mL。术后复查CTA示主动脉夹层支架置入术后未见夹层及内漏(图3)。



a:术前CTA影像;b:术前CTA三维重建影像

图1 降主动脉段夹层



a:主动脉夹层(箭头所示);b:支架开口位于左锁骨下动脉后缘(箭头所示);c:术中植入支架后造影

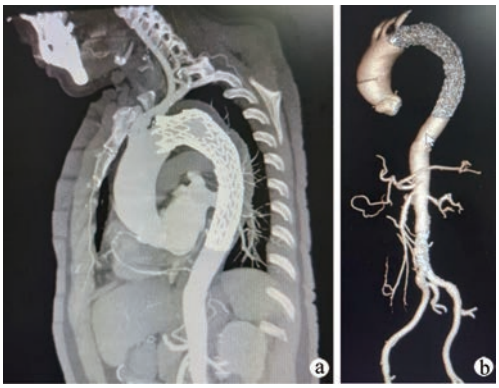
图2 TEVAR手术过程X射线影像

2 结果

术后1 d,患者出现双下肢活动障碍、排尿障碍。查体:血压108/64 mmHg。双下肢肌力3级,T_5以下感觉减退。考虑TEVAR术后并发脊髓缺血,即刻停用降压药物,予以升压、激素冲击、肝素抗凝治疗及盆底肌肉锻炼,于康复科行针灸、康复训练。神经内科及神经外科会诊均不考虑行脑脊液引流,认为该治疗对改善脊髓缺血无明显获益且会增加相关风险。术后2周,患者双下肢乏力较前缓解,仍不能自主排尿,转康复科治疗。术后1个月随访,患者下肢感觉、运动功能恢复,大便正常,控尿能力减退。

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a：术后 CTA 影像；b：术后 CTA 三维重建影像

图 3 TEVAR 术后复查 CTA 影像

3 讨论

TEVAR 是 Stanford B 型主动脉夹层的首选治疗方法[5]，但术后仍有发生脊髓缺血所致截瘫的风险，TEVAR术后脊髓缺血的发生率为 2% ~10%[6-7]。研究显示，TEVAR 术后并发脊髓缺血所致截瘫与高龄（>70 岁）、合并肾功能不全（肌酐 >132 mmol/L）、慢性阻塞性肺疾病、血压异常（低血压或高血压）、假性动脉瘤、支架长度 >205 mm、支架覆盖≥2 个血管区域、支架覆盖左锁骨下动脉、急诊手术、支架覆盖髂内动脉、支架跨髂动脉、术中使用≥3 个支架、手术时间过长、术中失血过多等有关[8-12]。本例患者仅合并高血压，经评估术后发生脊髓缺血的风险较低，但术后仍出现了双下肢轻瘫及膀胱括约肌障碍。

胸段脊髓前动脉主要供血由肋间动脉提供。肋间动脉中最重要的一根动脉为根最大动脉，多起源于 T_6 ~ L_3 之间，因其起源不确定，本例患者支架覆盖范围为 T_2 ~ T_9 段，可能对该动脉造成部分影响。另有研究发现，TEVAR 术中斑块脱落导致的脊髓根动脉栓塞亦可引起脊髓缺血[13]。除此之外，本例患者围术期的相对“低血压”可能参与了术后脊髓缺血的发生。因术前及术中对患者血压的控制使其血压远低于日常水平，而脊髓毛细血管灌注压由外周平均动脉压与脑脊液压力差值所决定，外周平均动脉压减小，脊髓可能处于相对“缺血”状态，支架对脊髓供血血管的覆盖，更加剧了脊髓缺血，进而导致了术后脊髓缺血的发生。

张猛等[14]认为，对血压的控制可能会导致围术期低血压的发生，在不影响支架置入精确性的情况下，可不常规降压，甚至可适当升高血压。术后一旦发生脊髓缺血，应尽早干预，对于术后血压相对较低的患者，尽早使用血管活性药物升压以增加脊髓血液灌注，早期多学科会诊，进行针对性功能训练、短期激素冲击、营养神经等治疗有助于改善脊髓缺血症状。

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