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## 彩色多普勒超声检测双侧颈内动脉闭塞患者侧支循环及血流动力学

### Color Doppler ultrasonography in detection of intracranial arterial collateral circulations and hemodynamics in patients with bilateral internal carotid artery occlusion

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中文关键词: [颈内动脉](#) [颈动脉疾病](#) [超声检查,多普勒,彩色](#) [侧支循环](#) [血流动力学](#)

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中文摘要:

目的 探讨彩色多普勒超声检测双侧颈内动脉闭塞患者颅内动脉侧支循环代偿途径及血流动力学状况的价值。方法 对7例双侧颈内动脉闭塞患者(患者组)和对照组7名健康成人,应用彩色多普勒超声检测双侧眼动脉(OA)及颅内动脉,分别根据患者OA反向血流及大脑后动脉(PCA)P1段峰值血流速度(Vs)大于对照组( $Ax-G+2s$ )来判断OA、Willis环后交通动脉侧支循环代偿途径,并比较患者组与对照组大脑中动脉(MCA)、大脑前动脉(ACA)的平均血流速度(Vm)。结果 7例患者均存在双侧OA反向血流,双侧椎动脉、基底动脉Vm明显高于对照组( $P<0.05$ );4例左侧PCA P1段和3例右侧PCA P1段Vs大于对照组;MCA、ACA Vm较对照组明显降低( $P<0.05$ )。结论 双侧ICA闭塞患者存在OA及后交通动脉两种侧支循环代偿途径,但其颅内动脉仍供血不足。彩色多普勒超声能实时评价颅内动脉侧支循环血供和血流动力学变化。

英文摘要:

**Objective** To observe the value of color Doppler ultrasonography in detection of intracranial arterial collateral circulations and hemodynamics in patients with bilateral internal carotid artery occlusion. **Methods** Seven patients with bilateral internal carotid artery (ICA) occlusion (patient group) and 7 healthy people (control group) were involved. The ophthalmic artery (OA) and cerebral artery were observed with color Doppler ultrasonography, and middle cerebral artery (MCA) and anterior cerebral artery (ACA) of mean blood flow velocities (Vm) were compared between the two groups. Collateral pathways through bilateral OA and posterior communicating artery (PCoA) were suggested when reversal of blood flow in OA was found and the peak systolic velocity (Vs) in P1 segment of posterior cerebral artery (PCA) was larger than Vs in control group ( $Ax-G+2s$ ), respectively. **Results** Reversal blood flow of bilateral OA was found in all 7 patients, Vm of bilateral vertebral artery and basilar artery in experimental group were larger than that in control group (both  $P<0.05$ ). Vs of P1 segment in left PCA of 4 patients and right PCA of 3 were larger than that in control group, but Vm of MCA and ACA in patient group was lower than that in control group (both  $P<0.05$ ). **Conclusion** There were two ways of collateral circulation in patients with bilateral ICA occlusion, but the intracranial arterial blood supply was still insufficient. The intracranial arterial collateral blood circulations and the changes of hemodynamics can be real time evaluated with color Doppler ultrasonography.

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