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◇临床医学◇

头颈部CT血管造影对自发性脑出血病因学诊断的应用价值

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摘要:目的 探讨头颈部CT血管造影(CTA)血管成像对于自发性脑出血(ICH)病因学诊断的应用价值。方法 回顾性分析2016年1月至2018年12月安徽医科大学第一附属医院200例ICH病人的头颈CTA资料及相关临床资料。分析ICH病人不同病因学发病年龄之间的差异,比较CTA与数字减影血管造影(DSA)诊断的符合度及CTA血肿内造影剂外渗所致斑点征对于预测脑出血血肿扩大的意义,从而评价头颈CTA在ICH病人中的应用价值。结果 200例ICH病人中由动脉瘤、动静脉畸形、烟雾病等血管性疾病所致的脑出血共计65例,高血压性脑出血106例,不明原因所致脑出血29例,其中高血压性脑出血病人所占比例(53.0%),明显高于由其他血管性疾病所致ICH。CTA与DSA比较诊断效率达94.3%。头颈CTA斑点征对于预测ICH病人后续血肿扩大差异有统计学意义($F=13.2, P<0.001$),其作为血肿扩大的预测因素阳性预测值达80%,阴性预测值达92.9%。结论 头颈部CTA可以作为ICH病人常规检查方法指导临床治疗。

关键词:脑出血; 血管造影术,数字减影; 脑底异常血管网病; 颅内动静脉畸形; 颅内出血,高血压性

The value of CT angiography in the etiological diagnosis of spontaneous cerebral hemorrhage

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Abstract: Objective To investigate the significance of CTA angiography in the etiological diagnosis of spontaneous cerebral hemorrhage. **Methods** Two hundred patients with spontaneous intracranial hemorrhage were enrolled in the First Affiliated Hospital of Anhui Medical University from January 2016 to December 2018. Their demographic and imaging data were analyzed. The difference between the ages of different etiology of ICH patients were analyzed. The diagnostic consistency of CTA with DSA was compared. And to explore the significance of spot sign caused by contrast agent extravasation in CTA angiography for predicting the expansion of cerebral hemorrhage. **Results** Of the 200 patients with ICH, 65 suffered from cerebral hemorrhage caused by vascular diseases such as aneurysm, arteriovenous malformation and moyamoya disease, 106 cases of hypertensive intracerebral hemorrhage, and 29 cases of cerebral hemorrhage caused by unknown causes. The proportion of ICH patients with hypertension was 53.0%, which was significantly higher than that caused by other vascular diseases. The rate of lesions detected by CTA compared with DSA was 94.3%. Spot sign was significantly different for predicting subsequent hematoma enlargement in ICH patients ($F=13.2, P<0.001$), and its positive predictive value for hematoma enlargement was 80%, and negative predictive value was 92.9%. **Conclusion** Head and neck CTA can be used as a routine examination method for ICH patients to guide clinical treatment.

Key words: Cerebral hemorrhage; Angiography, digital subtraction; Moyamoya disease; Intracranial arteriovenous malformations; Intracranial hemorrhage, hypertensive

自发性脑出血(intracerebral hemorrhage, ICH)是临床急重症疾病,严重危害病人的生命健康。据报道,ICH病人30 d病死率达30%~50%,且近50%的病人发病2周内死亡^[1]。我国脑出血的发病率亦呈逐年升高趋势,且具有较高的病死率及致残率。数字减影血管造影(DSA)是脑血管疾病诊断的金标准,CT血管成像作为脑出血病因学探查方法,较DSA无创、价廉,故脑出血病人首次CT血管造影

(CTA)及CT影像具有重要的临床意义。本组研究通过回顾性分析我院200例脑出血首诊或经治疗后随诊病人的CTA影像特点,总结CTA对于脑出血病人的临床应用价值。

1 资料与方法

1.1 一般资料 抽取2016年1月至2018年12月安徽医科大学第一附属医院收治的200例脑出血病人作为研究对象,病人均行CT平扫证实为脑出血,临

床表现为不同程度的头痛、呕吐及脑膜刺激征。200例病人中男140例,女60例,年龄(53.0 ± 14.3)岁,年龄范围为6~80岁。

1.2 方法 采用美国通用电气公司宝石CT或Revolution CT扫描仪,病人取仰卧位,头先入,扫描范围自主动脉弓至颅顶,造影剂用量为60~80 mL,注射速率4~5 mL/s,宝石CT采用小剂量团注法获得达峰时间,Revolution CT采用自动触发阈值,触发点定在主动脉弓,阈值150 Hu,对比剂为碘佛醇(350 mg/mL),随后追加30 mL生理盐水。扫描参数:管电压120 kV,管电流250 mA,准直64层 $\times 0.625$ mm,转速0.4 s/r,矩阵512 $\times 512$ 。所有数据薄层重建后传至后处理工作站进行重建,包括多平面重组(maximum intensity projection, MPR)、最大密度投影(multi planar reformation, MIP)以及容积再现技术(volume rendering technique, VR)。

1.3 统计学方法 采用SPSS13.0进行统计学分析。计量资料应用 $\bar{x} \pm s$,组间比较采用独立样本 t 检验;计数资料以百分率(%)表示,采用 χ^2 检验, $P < 0.05$ 时差异有统计学意义。

2 结果

2.1 CTA 检查结果 200例脑出血病人中,23例有脑动脉瘤,18例为血管畸形,24例为烟雾病,106例为高血压脑出血,29例原因不明。高血压性脑出血占比达53.0%,是脑出血病人最常见的发病原因。

2.2 DSA 与 CTA 检查结果比较 200例脑出血病人中35例行DSA及CTA检查,DSA显示脑动脉瘤17个,其中烟雾病合并动脉瘤1例,动静脉畸形合并动脉瘤1例(图1);烟雾病9例;CTA显示脑动脉瘤15个,1例烟雾病动脉瘤遗漏,另1例后交通动脉瘤遗漏,其余与DSA结果一致;以DSA作为诊断金标准,CTA较DSA漏诊小动脉瘤2个,CTA的灵敏度达93.9%,特异度达100%,诊断准确性为94.3%,两种检查结果比较,差异无统计学意义($P = 0.492$)。

2.3 CTA 检查发现的斑点征与血肿扩大之间的关系 CTA首诊急性期高血压性脑出血24例,其中10例(41.7%)发现造影剂外渗所致斑点征(图2),8例发生血肿扩大,2例未发生血肿扩大;14例(58.3%)未发现造影剂外渗所致斑点征,其中血肿未扩大13例(92.9%),血肿扩大者1例。

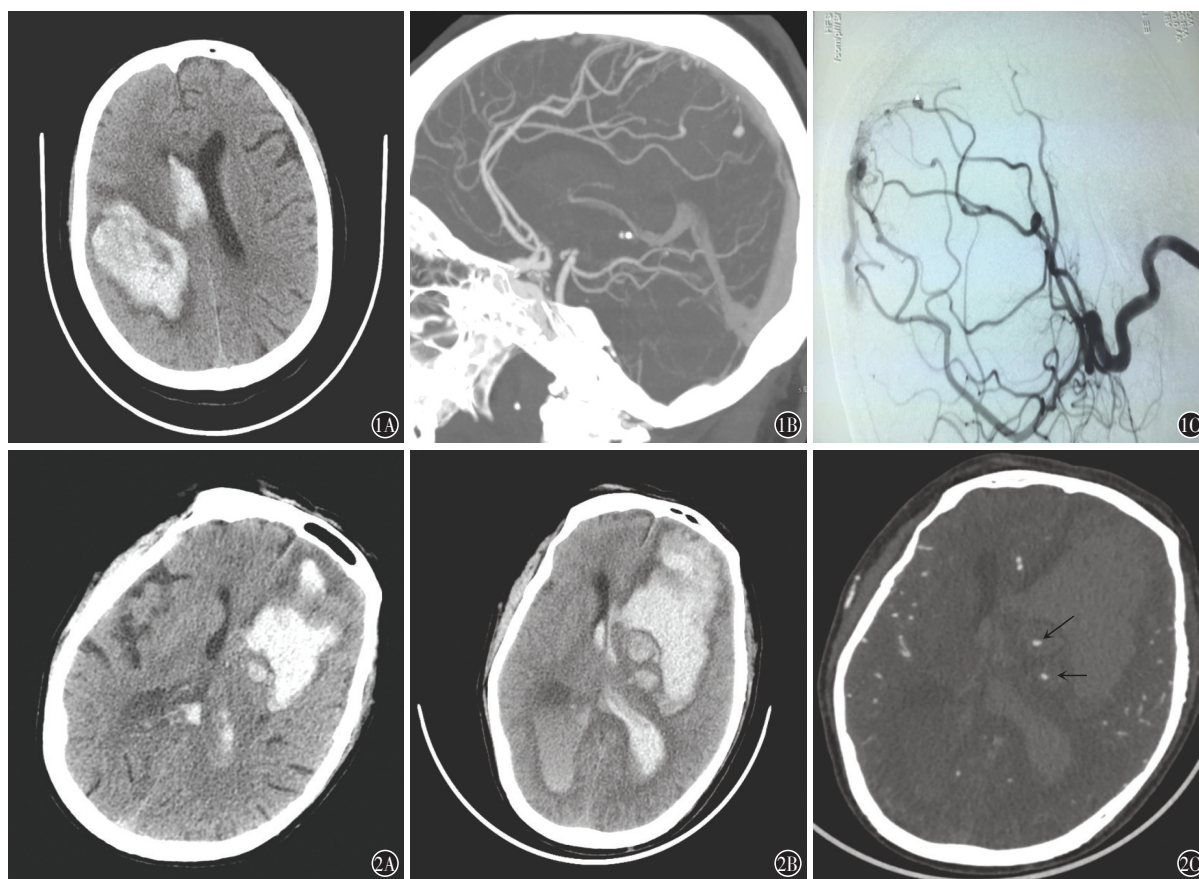


图1 女,75岁,右侧颞顶叶脑出血,图1A为CT平扫示血肿内混合征,图1B为CTA及图1C为DSA均显示右顶叶动静脉畸形合并远端小动脉瘤 图2 男,65岁,左侧基底节区、额叶脑出血,图2A为入院首诊CT平扫,图2B为间隔2.5 h后CT平扫图像示出血量明显增多,图2C为CTA示左侧基底节区斑点征(箭头所示)

斑点征与血肿扩大之间的阳性预测值为80.0%,阴性预测值为92.9%,CTA斑点征对于预测ICH病人后续血肿扩大差异有统计学意义($F=13.2, P<0.01$)。

3 讨论

脑出血又称为脑溢血,是神经内外科常见的急危重病种之一,致死致残率高^[1]。病因存在较多差异性,大多数的自发性脑出血病人是由于高血压导致的小血管破裂所致,本组病人200例中有106例均由于高血压导致脑出血,占比53%,与文献报道一致^[2-3]。另有一部分为脑内血管性疾病所致的颅内出血,包括脑动脉瘤,颅内血管畸形,烟雾病等。

随着我国社会老年化及高血压、糖尿病等疾病的发病率增高,高血压性脑出血成为我国脑卒中病人的主要致病因素。本研究通过回顾性分析200例脑出血病人的MSCTA诊断结果,显示高血压性脑出血占比达53%,其发病年龄约(58 ± 10.0)岁,明显高于其他病例的发病年龄,这与文献报道基本一致^[4]。35例病人同时行MSCTA检查及DSA检查,MSCTA与DSA检查结果具有高度的一致性,MSCTA漏诊脑动脉瘤2处,对于自发性颅内出血的诊断效率达到94.3%,灵敏度达93.9%,特异度达100%,且MSCTA较DSA检查具有无创性、廉价、操作简单、准确性高等优势,目前作为脑血管疾病的筛查方法已广泛应用于临床^[5]。

初始血肿量及血肿位置是影响ICH病人预后的显著影响因素,而出血后早期血肿扩大是ICH病人病情恶化及预后不良的一项独立预测因素^[5]。诸多研究表明提高脑出血病人预后的关键在于预防血肿扩大。血肿扩大表现为ICH病人24 h内复查CT血肿体积较首次CT增加 >12.5 mL或 $>33\%$,首次CT扫描在ICH发病6 h内^[6]。CT平扫的混合征^[7]、黑洞征^[8]均可作为ICH病人血肿扩大的预测因素。一些研究发现CTA检查的斑点征可以作为ICH病人的独立预测因素^[2,9]。本组研究在排除了颅内包括动脉瘤、动静脉畸形、静脉畸形以及烟雾病等血管性疾病后,自发性颅内出血106例高血压脑出血病人中首诊行CTA检查者24例,其中10例发现造影剂外渗所致斑点征,8例发现血肿明显扩大,阳性预测值达到80%,说明斑点征作为血肿扩大的预测因素具有较高的诊断价值,与文献报道一致^[10]。近年来,有学者研究^[11]斑点征内密度与周围血肿密度的差异值也可以作为预测血肿扩大的因素,而这还有待于进一步研究。

早期MSCTA检查可以排除高血压性脑出血血

肿继续扩大的风险,减少血肿继续扩大造成的不良事件。而对于由脑动脉瘤、动静脉畸形及烟雾病等脑血管疾病引起的ICH,国内外文献报道MSCTA对其病因学诊断及指导临床治疗意义重大^[11-13],特别对于颅内单发动脉瘤,MSCTA可以准确显示其位置、大小;对于动静脉畸形,MSCTA可准确显示其供血动脉、引流静脉及与周围组织的毗邻关系;对于烟雾病,MSCTA可显示颅内动脉狭窄的情况及颅底侧枝血管形成情况,指导临床手术方案的选择。

综上所述,自发性脑出血病人首诊CTA检查具有重要意义,年龄较小的ICH病人脑血管畸形或动脉瘤的发病率相对较高,CTA检查可以早期发现;年龄较大的ICH病人高血压性脑出血发生率相对较高,CTA检查出现斑点征对于预测血肿扩大可以提供客观的影像学指标,从而筛查出脑出血后容易发生血肿扩大的高危病人,指导临床有效的治疗方案。因此,ICH病人首诊CTA检查意义重大,在排除了临床禁忌证后通过头颈CTA一次检查同时发现颈、脑部血管病变,对指导治疗、预防脑卒中有积极作用。

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◇临床医学◇

健康体检人群鼾症与骨密度变化的关系

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摘要:目的 分析健康体检的鼾症与非鼾症人群骨密度变化规律, 研究鼾症对骨密度的影响。方法 选取安徽省立医院健康管理中心 2016 年 7 月至 2018 年 7 月 84 例鼾症病人为观察组, 38 例非鼾症人群为对照组, 参与本次研究的对象均经过体格检查、详细问诊, 采用双能 X 线吸收法(DXA)测定所有参与者的腰椎、两侧股骨骨密度值(BMD)和 T 值, 比较两组人群的 BMD。结果 两组 BMD 比较, 观察组腰椎 L₁₋₄[(1.12±0.19)g/cm²比(1.28±0.15)g/cm²]、L₂[(1.11±0.20)g/cm²比(1.26±0.14)g/cm²]、左侧股骨[(1.04±0.20)g/cm²比(1.12±0.10)g/cm²]、右侧股骨[(1.05±0.10)g/cm²比(1.11±0.11)g/cm²]均低于健康对照组(均 P<0.05); 观察组与对照组股骨大粗隆 BMD[(0.88±0.18)g/cm²比(0.92±0.19)g/cm²]差异无统计学意义(P>0.05); 两组骨密度 T 值比较, 观察组腰椎 L₁₋₄[(0.45±1.40)比(1.56±1.08)]、L₂[(0.33±1.42)比(1.47±1.17)]、左侧股骨[(0.47±1.16)比(0.99±0.78)]、右侧股骨[(0.39±1.09)比(0.93±0.79)]、股骨大粗隆[(0.31±1.13)比(0.81±0.69)]的骨密度 T 值均低于健康对照组(均 P<0.05)。结论 健康体检人群鼾症与骨密度减少存在一定相关性。鼾症病人较易发生骨量减少、甚至骨质疏松症, 鼾症病人应定期监测骨密度。关键词: 鼾症; 骨量减少; 骨质疏松; 体格检查

The bone mineral density variation of patients with snoring disease in physical examination people

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Abstract: Objective To compare the bone mineral density(BMD) between checkup with snoring disease and healthy checkup. To research the effects of snoring disease on the BMD. **Methods** Eighty-four male checkup with snore and thirty-eight male healthy checkup admitted in the health examination center of anhui provincial hospital at same time were selected in the experimental group and control group, respectively. The bone mineral density of anteroposterior lumbar spine (AP), the proximal femur and great trochanter (GT) measured with DXA. All the subjects filled questionnaire, and underwent physical examination and BMD measurement. **Results** The BMDs of the lumbar vertebra and the proximal femur were [L₁₋₄(1.12±0.19)g/cm² vs. (1.28±0.15)g/cm²], [L₂(1.11±0.20)g/cm² vs. (1.26±0.14)g/cm²], [left femur(1.04±0.20)g/cm² vs. (1.12±0.10)g/cm²], [right femur(1.05±0.10)g/cm² vs. (1.11±0.11)g/cm²] of the experimental group were completely lower than those of the control group, the difference had statistical significance (P<0.05). The measured Ts of each body parts of the experimental group were completely lower than those of the control group [L₁₋₄(0.45±1.40) vs. (1.56±1.08)], [L₂(0.33±1.42) vs. (1.47±1.17)], [left femur(0.47±1.16) vs. (0.99±0.78)], [right femur(0.39±1.09) vs. (0.93±0.79)], [greater trochanter offemur(0.31±1.13) vs. (0.81±0.69)], the difference had statistical significance (P<0.05). **Conclusion** Bone mineral density of patients with snoring disease is decreased, the BMD of patients with snoring disease should be timely learned.

Key words: Snoring disease; Bone mineral density; Osteoporosis; Physical examination