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高频彩色多普勒超声对乳腺癌腋窝淋巴结性质的鉴别价值

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摘要 目的:研究高频彩色多普勒超声对乳腺癌腋窝良性淋巴结与腋窝转移性淋巴结的鉴别价值。**方法:**选择2015年2月~2016年6月在我院进行诊治的乳腺癌患者150例,应用高频二维超声结合彩色多普勒血流显像技术,观察腋窝肿大淋巴结的声像图及血流情况。**结果:**经二维超声发现,乳腺癌腋窝良性淋巴结的皮质多向心增厚(68.93%)、长短径比L/S多>2.0(70.58%)、多不融合(93.14%)、多无钙化斑(97.06%);腋窝转移性淋巴结的皮质多偏心增厚(68.48%)、长短径比L/S多<2.0(69.57%)、多融合(68.48%)、多有钙化斑(77.17%);两者相比有明显差异($P<0.05$);经彩色多普勒血流显像技术发现,乳腺癌腋窝良性淋巴结的血流信号分布多呈门型(63.17%),血流丰富程度多为II级(54.35%);腋窝转移性淋巴结的血流信号分布多呈周边型(68.93%),血流丰富程度多为III级(72.83%);两者相比有明显差异($P<0.05$)。**结论:**乳腺癌腋窝良性淋巴结与腋窝转移性淋巴结在内部回声、形态、血流分布特点等方面有显著的差异,高频彩色多普勒超声对乳腺癌腋窝良性淋巴结与腋窝转移性淋巴结具有较高的鉴别价值。

关键词:彩色多普勒超声;乳腺癌;腋窝淋巴结

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Clinical Value of High-frequency Color Doppler Ultrasonography in Identifying Axillary Lymph Nodes in Breast Cancer

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ABSTRACT Objective: To study the clinical value of high-frequency color Doppler ultrasonography in identifying axillary benignant lymph nodes and metastatic lymph nodes of breast cancer. **Methods:** 150 cases of patients with breast cancer who were treated in our hospital from February 2015 to June 2015 were selected. The sonograms and characteristics of blood flow were analyzed by high-frequency two-dimensional ultrasonography combined with color Doppler flow imaging. **Results:** The two-dimensional ultrasound found that the cortex of axillary benignant lymph nodes mostly were centripetal thickening (68.93 %), L/s >2.0 (70.58 %), fusion (93.14 %), multiple calcified plaque (97.06 %); the cortex of metastatic lymph nodes mostly were eccentric thickening (68.48 %), L/s <2.0 (69.57 %), fusion (68.48 %), calcification (77.17 %); they had significant difference ($P<0.05$); by color Doppler flow imaging found that blood flow signals distribution of axillary benignant lymph nodes mostly were door type (63.17 %), abundant blood flow levels mostly were grade II (54.35 %); the blood flow signals distribution of metastatic lymph nodes mostly were peripheral (68.93 %), the abundant blood flow levels mostly were grade III (72.83 %); they had significant difference ($P<0.05$). **Conclusions:** Axillary benignant and metastatic lymph nodes have significant different internal echo, morphology and blood flow distribution characteristics, and the high-frequency color Doppler ultrasonography has high diagnostic value for axillary benignant and metastatic lymph nodes.

Key words: Doppler ultrasonography; Breast cancer; Axillary lymph nodes

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前言

乳腺癌最为常见的首发转移部位是腋窝淋巴结,准确判断其性质有利于评估病情、确定肿瘤分期、确定治疗方案及判断预后^[1]。目前临床发现腋窝淋巴结主要采取触诊、CT检查和穿

刺活检,但触诊的只能发现直径>1.5 cm的淋巴结肿块,灵敏度较低;CT检查对机体有X线放射性损伤,对哺乳期女性不适合;穿刺活检为有创性,部分患者不能接受^[2]。彩色多普勒超声检查对乳腺癌筛查具有较高的特异度及灵敏度,可以清晰显示乳腺肿瘤的彩色血流信号和血管分布,目前已成为乳腺癌早期诊断的常用检查方法。徐军华^[3]等研究表明,高频彩色多普勒超声对于乳腺癌腋窝淋巴结转移的诊断敏感度、特异度以及准确性均较高,为进一步比较乳腺癌腋窝淋巴结转移与乳腺癌腋窝良性淋巴结的超声影像差异,本次研究分析195枚成像条件

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较好的肿大淋巴结的彩色多普勒超声检查结果(大小、回声、皮质、钙化、血流分部及血流信号分级),以期乳腺癌腋窝良性淋巴结与腋窝转移性淋巴结的鉴别提供参考。

1 资料和方法

1.1 一般资料

选择 2015 年 2 月~2016 年 6 月在我院进行诊治的乳腺癌患者 150 例,均为女性患者,年龄 23~74 岁,平均(47.96±5.25)岁。共选取 195 枚成像条件较好的肿大淋巴结,其中腋窝良性肿大淋巴结 103 枚(脂肪浸润 28 枚,反应性增生 52 枚,淋巴结炎 23 枚);乳腺癌腋窝转移性肿大淋巴结 92 枚。

1.2 研究方法

取仰卧位,双臂上举,使腋窝充分暴露。应用 Philips HD15 彩色多普勒超声诊断仪,型号为 L12-3,频率设置为 3~12 MHz。检查腋窝淋巴结的形态、长短比、大小和内部回声。再采用彩色多普勒血流显像技术检查淋巴结中血流的分布情况,根据血流分布特征分为周边型、门型、分散型及混合型,并对血流

信号进行分级。分级标准^[4]:0 0 级,没有发现血流信号;0 1 级,淋巴结内有少量血流,长度<淋巴结长径的一半,血流信号表现为棒状;0 2 级,淋巴结内有中量血流,有 2~3 条小血管,或者 1 条主要血管的长度>淋巴结的一半;0 3 级,淋巴结内有丰富的血流,病灶内有>4 条的血管。

1.3 统计学分析

采用 SPSS15.00 软件,计数资料用例和%表示,采用 χ^2 检验, $P<0.05$ 为差异有统计学意义。

2 结果

2.1 乳腺癌腋窝良性淋巴结与腋窝转移性淋巴结二维超声比较

经二维超声发现,乳腺癌腋窝良性淋巴结的皮质多向心增厚(68.93%)、长短径比 L/S 多>2.0(70.58%)、多不融合(93.14%)、多无钙化斑(97.06%);腋窝转移性淋巴结的皮质多偏心增厚(68.48%)、长短径比 L/S 多<2.0(69.57%)、多融合(68.48%)、多有钙化斑(77.17%);两者相比有明显差异($P<0.05$),见表 1。

表 1 乳腺癌腋窝良性淋巴结与腋窝转移性淋巴结二维超声比较[例(%)]

Table 1 Comparison of the axillary benignant lymph nodes and metastatic lymph nodes of breast cancer by two dimensional ultrasound[n(%)]

		Axillary benignant lymph nodes n=103	Axillary metastatic lymph nodes n=92
Cortex	No thickening	21(20.39)	5(5.43)*
	Concentric thickening	71(68.93)	24(26.09)*
	Eccentric thickening	11(10.68)	63(68.48)*
L/S	>2.0	72(70.58)	28(30.43)*
	<2.0	30(29.42)	64(69.57)*
Plocoid	Fuse	7(6.86)	29(31.52)*
	Non fusion	95(93.14)	63(68.48)*
Calcified plaque	Have calcification	3(2.94)	21(22.83)*
	No calcification	99(97.06)	71(77.17)*

Note: Compared with axillary benignant lymph nodes, * $P<0.05$.

2.2 乳腺癌腋窝良性淋巴结与腋窝转移性淋巴结彩色血流比较

经彩色多普勒血流显像技术发现,乳腺癌腋窝良性淋巴结的血流信号分布多呈门型(63.17%),血流丰富程度多为 II 级

(54.35%);腋窝转移性淋巴结的血流信号分布多呈周边型(68.93%),血流丰富程度多为 III 级(72.83%);两者相比有明显差异($P<0.05$),见表 2。

表 2 乳腺癌腋窝良性淋巴结与腋窝转移性淋巴结彩色血流比较[例(%)]

Table 2 Comparison of the axillary benignant lymph nodes and metastatic lymph nodes of breast cancer by color flow [n(%)]

		Axillary benignant lymph nodes n=103	Axillary metastatic lymph nodes n=92
Blood flow signal distribution	Door type	63(61.17)	21(22.83)*
	Dispersion type	9(8.74)	9(9.78)
	Peripheral type	16(15.53)	50(54.35)*
	Mixed type	14(13.73)	12(13.04)
Degrees of richness of blood flow	Grade 0~ I	16(15.53)	3(3.26)
	Grade II	71(68.93)	22(23.91)*
	Grade III	15(14.56)	67(72.83)*

Note: Compared with axillary benignant lymph nodes, * $P<0.05$.

3 讨论

乳腺癌是乳腺末梢上皮和导管上皮发生的恶性肿瘤^[5]。乳腺癌的致病因素主要包括:家族史、一侧已患乳癌、未哺乳、未生育妇女、腺体致密、卵巢内分泌紊乱引起雌激素分泌过多、高脂饮食和乳腺增生等^[6-8]。早期发现、早诊断、早治疗具有重要的临床意义。超声对乳腺癌患者病灶部位及乳腺组织无损伤,不受腺体致密及体积大小的影响,可以准确区别乳腺内的液性和实质肿块^[9-11]。而高频彩色多普勒超声不仅能清晰显示微小乳腺肿瘤的细微结构和内部特征,还能有效鉴别乳腺小肿瘤的良、恶性质^[12,13]。

当毒素、细菌、癌细胞和异物等到达局部淋巴结时,会造成淋巴结的肿大,并且能刺激淋巴细胞、巨噬细胞和浆细胞的增殖并发挥免疫功能^[14]。腋窝淋巴结极易受乳腺癌侵犯,如果可以在术前诊断乳腺癌腋窝淋巴结有无发生转移,就能有效避免不必要的腋窝淋巴结清扫术。高薇^[15]等采用二维超声及彩色多普勒超声对乳腺癌腋窝淋巴结的定性诊断进行了研究,发现而为超声下,乳腺癌转移性腋窝淋巴结的长短径比 L/S 多 <2.0,内部回声多不均匀且皮质增厚。本研究结果证实了以上观点,发现腋窝转移性淋巴结的皮质增厚、长短径比 L/S 多 <2.0;乳腺癌腋窝良性淋巴结的皮质多增厚、长短径比 L/S 多 >2.0 两者相比有明显差异($P<0.05$);而且本研究还进一步对其皮症增厚情况进行研究,发现乳腺癌腋窝良性淋巴结的皮质多向心增厚(68.93%),腋窝转移性淋巴结的皮质多偏心增厚(68.48%);同时腋窝转移性淋巴结多融合、有钙化斑,乳腺癌腋窝良性淋巴结多不融合、多无钙化斑。提示在形态学方面,腋窝转移性淋巴结的长短径比 <2,形态更接近于卵圆形或圆形;皮质多出现偏心,不均匀性增厚,相互融合,且有钙化斑的现象。分析其原因为腋窝转移性淋巴结的正常结构被肿瘤细胞损坏,皮质、包膜和髓质均受到侵犯;且由于癌细胞侵入淋巴结,并发生分裂增殖,侵犯髓质及中间窦,逐渐使全部淋巴结被癌组织取代,造成正常淋巴结原有的结构层次出现改变甚至消失,常表现为与乳腺癌原发灶相类似的钙化声像或非均质回声^[16]。

付赵虎^[17]和郑华敏^[18]等人的相关研究显示,乳腺癌腋窝良性淋巴结的血流信号分布多呈门型,而腋窝转移性淋巴结的血流信号分布多呈周边型,本研究经过彩色多普勒血流显像技术证实了以上观点。但以上研究仅对于乳腺癌腋窝淋巴结血流信号分布做了分析,未见对其血流信号分级的研究。因此本研究通过彩色多普勒血流显像技术分析乳腺癌腋窝淋巴结的血流丰富程度,发现乳腺癌腋窝良性淋巴结的血流丰富程度多为Ⅱ级;而腋窝转移性淋巴结的血流丰富程度多为Ⅲ级;两者相比有明显差异($P<0.05$)。提示腋窝良性淋巴结血管未受到破坏,尚可以保持正常的基本结构,血流信号分布多为门型;腋窝转移性淋巴结血流多为Ⅲ级,主要是因为癌细胞可以促进血管生成因子的大量释放,使得肿瘤内新生血管加速生成,血管数量增加;血流分布主要为周围型则是由于癌细胞的过度增殖能增厚皮质,生成大量的异常肿瘤血管,血管走行出现狭窄、屈曲、紊乱,导致周围型分布的出现^[19]。

近年来,高频二维超声已经成为乳腺癌腋窝淋巴结临床诊断的基础,其可提供较高质量的声像图,清楚显示淋巴结的大小、形态、回声等信息,但是仅依靠以上信息无法对乳腺癌腋窝淋巴结进行定性诊断,且临床诊断正确率不高^[20];因此临床将高频二维超声与彩色多普勒血流显像技术联合应用,彩色多普勒血流显像技术辅助提供乳腺癌腋窝淋巴结的血流分部及血流信号分级等信息,不仅可提高疾病的临床诊断正确率,而且为疾病的定性分析提供了更加充足的信息。在临床采用超声检测血流的操作过程中,应该及时确定不同超声仪器物理成像条件设置的差异以尽可能的降低误差,本研究把彩色多普勒的焦点设置为病灶水平,并将参数设定为低壁滤波和高敏感性,以获取较为敏感且具有可比性的血流图像。

综上所述,乳腺癌腋窝良性淋巴结与腋窝转移性淋巴结在内部回声、形态、血流分布特点等方面有显著的差异,高频彩色多普勒超声对乳腺癌腋窝良性淋巴结与腋窝转移性淋巴结具有较高的鉴别价值。

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(上接第2533页)

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