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超声弹性成像技术对腋窝淋巴结性质的诊断价值

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摘要 目的:研究超声弹性成像技术对腋窝淋巴结性质的诊断价值。**方法:**从 2013 年 5 月至 2014 年 2 月,选择我院 50 例乳腺癌患者,对所有患者进行弹性成像技术检测出 74 个腋窝淋巴结。对所有腋窝淋巴结使用四分法进行评分,将其与手术病理结果进行比较。**结果:**74 个腋窝淋巴结中,反应性淋巴结有 42 个,纵径为(0.9-2.4)cm,平均纵径为(1.31±0.33)cm;乳腺癌腋窝淋巴结转移个数为 25 个,纵径为(1.2±3.8)cm,平均纵径为(2.04±0.72)cm。良性淋巴结弹性评分大多为 1 分(54.55%)以及 2 分(27.27%),恶性淋巴结评分多为 3 分(63.33%)以及 4 分(20.00%)。恶性淋巴结评分为(3.12±0.61)分,良性淋巴结评分为(1.68±0.74)分,结果显示,两组淋巴结弹性评分具有较大差异(即 $P < 0.05$),具有可比性。**结论:**综上所述,超声弹性成像技术操作较为简便,效果较为直观,评分法能够提供组织的硬度信息,在临床工作中,与常规超声联合应用有利于提高评价腋窝淋巴结良恶性性质的准确度。值得临床推荐使用。

关键词:超声弹性成像技术;腋窝淋巴结;诊断价值

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The Value of Ultrasound Elasticity Imaging Technology in the Diagnosis of Axillary Lymph Node Characteristic

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ABSTRACT Objective: To study the value of ultrasound elasticity imaging technology in the diagnosis of axillary lymph node characteristic. **Methods:** 50 cases of patients with breast cancer underwent elastography detection of 74 axillary lymph nodes in our hospital from 2013 May to 2014 February. The quartering methods was used to evaluate the axillary lymph node, and the results were compared with those of pathology. **Results:** Among 74 axillary lymph nodes, there were 42 reactive lymph nodes, the longitudinal diameter was (0.9-2.4) cm, and average longitudinal diameter was (1.31 ± 0.33) cm; The number of breast cancer metastatic axillary lymph node was 25, the longitudinal diameter was (1.2 ± 3.8) cm, and the average longitudinal diameter was (2.04 ± 0.72) cm. Benign lymph node elastic score was mostly 1 point (54.55%) and 2 points (27.27%), malignant lymph node score was mostly 3 points (63.33%) and 4 points(20%).The score for malignant lymph node was (3.12 ± 0.61)points, and was (1.68 ± 0.74)points for benign lymph nodes, the results showed there was statistically significant difference in lymph node elastic score between two groups($P < 0.05$). **Conclusion:** The ultrasound elasticity imaging technology was easily operative, more intuitively clear, the scoring method can provide tissue hardness information, by combining with conventional ultrasonography, it will help in improving accuracy of the evaluation of benign and malignant lymph nodes. It is worthy of wide application.

Key words: Ultrasound elasticity imaging technique; Axillary lymph node; Diagnostic value

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前言

腋窝淋巴结是否会发生转移是对乳腺癌预后产生影响的重要原因,手术之前对腋窝淋巴结是否会发生转移进行确定,对于手术方式的选择以及治疗方案的确定具有重要参考意义^[1-3]。若在手术之前未发现腋窝淋巴结转移征象,现今临床所推荐的常规手术程序是先进行前哨淋巴结活检,若检测结果呈阳性则需进行腋窝淋巴结清扫。若手术之前能够明确腋窝淋巴结

转移^[4,5],则能够在手术中进行腋窝淋巴结清扫。避免不必要的前哨淋巴结活检能够缩短手术时间,减少手术费用并降低术后并发症风险^[6-8]。常规超声作为检测腋窝淋巴结转移较为重要的手段,敏感度较低成为其面临的普遍问题。超声弹性成像作为近年来发展的一项新技术,通过对组织的不同硬度进行比较,对病变良恶性做出判断,目前已经广泛应用在乳腺、甲状腺以及前列腺病灶性质的检查,并且在一定程度上提升了诊断效能。本文特此对超声弹性成像对腋窝淋巴结性质的诊断价值,得到了一些结论,现报道如下。

1 资料和方法

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1.1 临床资料

从2013年5月至2014年2月,选择我院50例乳腺癌患者,对所有患者进行弹性成像技术检测出74个腋窝淋巴结。所有患者均为女性,年龄在30-69岁,平均年龄为45.12±2.35岁。所有研究对象均行乳腺癌根治术或者乳腺癌改良根治术,手术中常规进行淋巴结清扫,均由病理结果证实。纳入对象排除标准:乳腺癌患者在术前进行过化疗、放疗治疗操作;患者失访。

1.2 研究方法

使用西门子SIEMENS S2000,浅表探头9L,频率7-9MHz,仪器设置采用乳腺条件。患者采取仰卧位,双臂上举,将腋窝充分暴露,二维超声观察腋窝淋巴结大小、纵横比、皮质部厚度、有无淋巴门结构、血流分布类型以及阻力指数,定位于淋巴结最大长轴切面切换至弹性成像模式,嘱咐患者呼吸平静,手持探头垂直于淋巴结做连续手动压缩,实时观察二维图像以及弹性图像。图像的稳定性以压力指数3-4为标准,保存图片并选择感兴趣区域。感兴趣区应该调至病变面积的2倍以上,最低不能低于1.5倍,要避开胸部肌肉以及腋窝血管。弹性图像的采集与分析均由两位资深医师进行操作,意见不一致时应该进行重复检查,直至达成一致后得出结论。挑选出最为可

疑的淋巴结并且在对应部位做出体表标志,以便和病理结果对应进行对照分析。

1.3 疗效评价

病灶硬度的弹性分级标准^[9]:SIEMENS S2000机型使用红色表示硬度最小,绿色表示平均硬度,蓝色代表组织硬度最大。淋巴结弹性评分使用Choi JJ的四分法^[10],1分:淋巴结内全部呈现绿色或者有少量蓝色出现;2分:散在的蓝色区域,比例小于45%;3分:蓝色区域较多,大于45%;4分:蓝色区域分布于整个淋巴结,边缘有绿色或者无绿色出现。

1.4 统计学方法

采用SPSS13.0统计软件分析,数据比较采用 χ^2 检验, $P<0.05$ 为差异有统计学意义。

2 结果

2.1 腋窝淋巴结病理检查结果

74个腋窝淋巴结中,反应性淋巴结有42个,纵径为0.9-2.4 cm,平均纵径为(1.31±0.33) cm;乳腺癌腋窝淋巴结转移个数为25个,纵径为1.2±3.8 cm,平均纵径为(2.04±0.72) cm。见下表1:

表1 腋窝淋巴结病理检查结果($n, \bar{x} \pm s$)

Table 1 Pathological examination results of axillary lymph nodes($n, \bar{x} \pm s$)

腋窝淋巴结个数 Number of Axillary lymph node	反应性淋巴结个数 Number of Reactive lymph node	纵径 Longitudinal diameter	平均纵径 Average longitudinal diameter	乳腺癌腋窝淋巴结转移个数 Number of breast cancer metastatic axillary lymph node	纵径 Longitudinal diameter	平均纵径 Average longitudinal diameter
74	42	0.9-2.4	1.31±0.33	25	1.2±3.8	2.04±0.72

2.2 腋窝淋巴结超声弹性成像和病理结果对比

良性淋巴结弹性评分大多为1分(54.55%)以及2分(27.27%),恶性淋巴结评分多为3分(63.33%)以及4分(20.00%)。差异具有统计学意义(即 $P<0.05$)。见下表2、图1:

表2 腋窝淋巴结超声弹性成像和病理结果对比[n(%)]

Table 2 Comparison of ultrasound elasticity imaging and pathological results of axillary lymph node[n(%)]

组别 Groups	例数 Cases	1分 1 points	2分 2 points	3分 3 points	4分 4 points
良性组 Benign group	44	24(54.55)	12(27.27)	8(18.18)	3(6.82)
恶性组 Malignant group	30	0(0.00)	5(16.67)	19(63.33)	6(20.00)
χ^2	-	24.218	1.134	15.692	2.901
P	-	<0.05	>0.05	<0.05	>0.05

3 讨论

当今把乳腺癌前哨淋巴结活检适应症作为临床检查腋窝淋巴结阴性,而明确的腋窝淋巴结转移是前哨淋巴结活检的禁忌症^[11-13]。现用于术前评价腋窝淋巴结性质的多种影像手段中,常规超声通过对腋窝淋巴结大小、形态、淋巴结结构以及皮质厚度等进行观察,能够术前对腋窝淋巴结性质一定程度上做出初步判断,和钼靶、CT、MRI、PET-CT进行对比,无辐射损伤,

操作较为简单,但是其敏感度有待进一步提高。有报道超声弹性成像技术有助于转移性颈淋巴结以及转移性腹股沟的相关鉴别诊断^[14,15]。

在本次研究中,良性组中淋巴结弹性评分大多为1分(54.55%)以及2分(27.27%),恶性组中淋巴结评分多为3分(63.33%)以及4分(20.00%)。恶性淋巴结评分为(3.12±0.61)分,良性淋巴结评分为(1.68±0.74)分,结果显示,两组淋巴结弹性评分具有较大差异(即 $P<0.05$),具有可比性。这表明超声

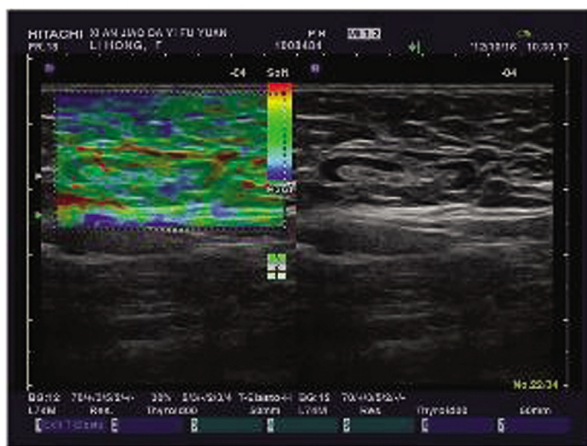


图 1 腋窝非转移性淋巴结声像图

Fig. 1 Image of axillary non metastatic lymph node

弹性成像技术,具有较为直观的效果,能够提供组织的各方面信息与常规超声联合应用有利于提高评价腋窝淋巴结良恶性性质的准确度^[16]。弹性成像技术是通过不同组织间弹性系数不一样,在受外力压迫后组织变形程度各不相同,将受到压迫前后回声信号移动幅度的改变转化成实时彩色的图像表现出来。当弹性系数较小时,受压后位移变化较大的组织显示出红色,弹性系数较大时,受压后位移改变较小的组织为蓝色,弹性系数居中的组织显示出绿色,根据图像色彩反映出组织的硬度^[17]。生物组织的弹性和病灶的生物学特性有较大关系,其弹性取决于组织的分子构成,恶性病变发生时,能够大幅度改变其内部结构,导致弹性特征发生改变,硬度发生相应增加^[18]。由于腋窝淋巴结在人体内属于次级免疫器官,有免疫防御作用。正常的腋窝淋巴结为长椭圆形,中央部位有动脉以及静脉,脂肪以及淋巴窦所形成的高回声淋巴结门,周边均匀低回声为淋巴结皮质^[19]。乳腺癌腋窝淋巴结在转移早期时,癌细胞首先通过输入淋巴管种植在淋巴结边缘窦,之后蔓延进入髓窦^[20]。后期淋巴结内完全被癌细胞占据,病情恶化,癌细胞则会突破包膜,并且和周围组织发生粘连,与此同时,和周围间质纤维组织增生,致使淋巴结活动度较低,硬度增大,受压时形变更小,弹性成像蓝色范围则进一步增大。

反应性腋窝淋巴结最为常见的类型是淋巴滤泡增生,其淋巴滤泡增大以及增加较为明显,主要在皮质位置,皮质部位增厚,在常规超声声像图上和转移性淋巴结表现相似,但此时其内部硬度并未增大,所以弹性成像评分和转移性淋巴结组评分相比较低,大多为 1-2 分,说明弹性成像在对腋窝淋巴结性质进行判断方面,可能在一定程度上弥补常规超声的不足。

综上所述,超声弹性成像技术操作较为简便,效果较为直观,评分法能够提供组织的硬度信息,在临床工作中,与常规超声联合应用有利于提高评价腋窝淋巴结良恶性性质的准确度。值得临床推荐使用。

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