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超声联合 CEA 和 CA15-3 检测对乳腺癌的诊断价值

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摘要 目的:研究彩色多普勒超声联合癌胚抗原(CEA)和糖链抗原 15-3(CA15-3)检测在乳腺癌诊断中的价值。**方法:**选取我院 2010 年 2 月~2011 年 1 月的 98 例乳腺肿块患者,患者均行彩色多普勒超声检查,采用化学发光免疫法检测血清 CEA、CA-153 水平,并结合常规活检和术后诊断进行统计学分析。对比三者联合检测与单一检测的敏感性、准确性。**结果:**彩色多普勒超声、血清 CEA、CA15-3 检查及三者联合检查诊断乳腺癌的敏感性、准确性分别为 86.11%、30.56%、47.22%、97.22%和 88.78%、73.47%、77.55%、94.90%,联合检查的准确性、敏感性高于单一检查,差异有统计学意义($P<0.05$)。**结论:**彩色多普勒超声检测方法联合 CEA、CA15-3 检查可提升乳腺癌诊断的准确性和敏感性,降低漏诊率。

关键词:多普勒超声;乳腺癌;癌胚抗原;糖链抗原

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Diagnostic Value of Ultrasonography Combined with Serum CEA and CA15-3 Detection for Mammary Cancer

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ABSTRACT Objective: To study the value of color doppler ultrasonography combined with serum CEA and CA-153 in the diagnosis of mammary cancer. **Methods:** 98 cases of patients with breast mass were selected in our hospital from February 2010 to January 2011, all patients were recieved the examination of the color doppler ultrasonography and detection of serum CEA and CA-153 using chemiluminescence immunoassay. The diagnostic sensitivity was analyzed on the basis of biopsy and postoperative pathological diagnosis. Comparing the sensitivity and accuracy of three joint detection and single detection. **Results:** The sensitivity and accuracy of color doppler ultrasonography, serum CEA, CA-153 and combination of three methods in the diagnosis of breast cancer were 86.11%, 30.56%, 47.22%, 97.22%, 88.78%, 73.47%, 77.55%, 94.90%, respectively. The sensitivity, accuracy of combined detection of the three higher than that of single detection method ($P<0.05$). **Conclusions:** Color doppler ultrasonography combined with serum CEA and CA-153 detection can increase the sensitivity and accuracy in the diagnosis of breast carcinoma, reduce the rate of missed diagnosis.

Key words: Color Doppler Ultrasonography; Breast cancer; CEA; CA-153

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前言

乳腺癌(Mammary cancer)是女性最常见的恶性肿瘤之一,发病率占全身各种恶性肿瘤的 7-10%,已严重威胁妇女健康^[1-3]。近年来,它的发病率持续增加^[4-5],尽早的检测出乳腺癌已经成为临床和研究的热点。彩色多普勒超声在我国是乳腺检测中常用的手段,同时有研究报道,癌胚抗原(Carcinoembryonic antigen,CEA)、糖链抗原 15-3 (Carbohydrate antigen 15-3, CA15-3)也可以提高乳腺癌实验室阳性检出率^[6-8]。为进一步提高乳腺癌患者的检出率,本研究重点探讨结合三种方法联合检验在诊断乳腺癌中的价值。

1 对象与方法

1.1 对象

选取我院自 2010 年 2 月~2011 年 1 月的乳腺肿块患者 98 例,均为女性,年龄 28~71 岁;肿块直径 6-110 mm,平均 58 mm;单侧病变为主,左侧 52 例,右侧 44 例,双侧病变 2 例;其中内上象限 30 例,内下象限 5 例,外上象限 51 例,外下象限 6 例,近乳头处 6 例;伴腋窝淋巴结肿大 23 例。

1.2 方法

1.2.1 多普勒超声 本研究采用的超声是 Sequia512 型彩色多普勒超声诊断仪,探头的频率是 10~13 MHz。按常规检查方法先检查肿块的形态、大小、边界、位置、内方及后方回声、钙化情况、纵横径比及其与周边组织的关联,腋窝淋巴结是否肿大等二维超声。在这基础上,用彩色多普勒探测其内部及周围血

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流状况。血流状况选择最高流速的实行频谱检测,参数包括阻力指数(RI),搏动指数(PI),血流最大速度(Vmax),记下三次测量的平均值。

1.2.2 肿瘤标志物测定 患者空腹静脉采血 3 mL 并分离血清,后在 -20 ℃ 冻存以备用,采用化学发光免疫法检测 CEA、CA-153 水平,试剂盒均由美国 Bayer 公司提供。

1.2.3 结果判定 乳腺癌常规二维超声诊断标准^[9]:(1)边缘呈毛刺状;(2)形态不规则;(3)内部回声不均匀;(4)后方回声减弱;(5)边界不清楚;(6)纵横比大于 1;(7)存在腋下淋巴结肿大。血流显像阻力指数(RI)≥0.7 是乳腺癌的诊断标准。CEA、CA-153 结果超过正常上限是阳性(正常值 CEA<3.4 ng/mL;CA-153<25 U/mL)。标准是只要三者中有一项是恶性则诊断为乳腺癌;三者全是良性才定义为良性肿瘤。特异性 = 真阴性 / 对照组;敏感性 = 真阳性 / 病例组;漏诊率 = 1 - 敏感性;准确性 = (真阴性 + 真阳性) / (对照组 + 病例组);阳性预测值 = 真阳性 / (假阳性 + 真阳性);阴性预测值 = 真阴性 / (假阴性 + 真阴性)。

1.3 统计方法

应用统计学软件 SPSS17.0 分析数据,计量资料用($\bar{x} \pm s$)表示,行 t 检验,计数资料用(%)表示,行卡方值检验,以 $P < 0.05$

为有统计学意义。

2 结果

2.1 病理结果

98 例乳腺肿块患者中,有 62 例良性肿瘤:30 例乳腺增生症,29 例纤维腺瘤,1 例脂肪瘤,1 例乳腺脓肿,1 例乳头状瘤;36 例乳腺癌:30 例浸润性导管癌,2 例腺癌,2 例浸润性小叶癌,1 例乳头状癌,1 例髓样癌。

2.2 两组患者血清 CEA、CA-153 检测结果

良性肿瘤患者血清 CEA、CA-153 水平分别为(3.12 ± 0.09) ng/mL、(16.56 ± 0.69) U/mL,低于恶性肿瘤患者的(10.43 ± 0.54) ng/mL、(40.39 ± 1.23) U/mL,差异有统计学意义($P < 0.05$)。

2.3 超声与血清 CEA、CA-153 单独及联合检测诊断乳腺癌的结果

多普勒超声检查显示,假阳性 6 例,假阴性 5 例;CEA 检测显示,假阳性 1 例,假阴性 25 例;CA-153 检测显示,假阳性 3 例,假阴性 19 例。三者联合检查显示,假阳性 4 例,假阴性 1 例。而三者联合检查的敏感性和准确性均比单一检测高,差异有统计学意义($P < 0.05$)。详见表 1。

表 1 乳腺癌诊断功能的比较

Table 1 Comparison of the effectiveness of breast cancer diagnosis

方法 Methods	敏感性 Sensitivity	特异性 Specificity	准确性 Accuracy	阳性预测值 Positive predictive value	阴性预测值 Negative predictive value
多普勒超声 Doppler ultrasound	86.11%	90.32%	88.78%	83.78%	91.80%
CEA	30.56%	98.39%	73.47%	91.67%	70.93%
CA-153	47.22%	95.16%	77.55%	85.00%	75.64%
三者联合 Combination of three methods	97.22%*	93.55%	94.90%*	89.74%	98.31%

注:与其他方法比较,* $P < 0.05$ 。

Note: Compared with other methods, * $P < 0.05$.

3 讨论

近年来,随着乳腺癌的发病情况越来越多,它严重威胁着妇女的身心健康,采用有效的检测方法尽早准确的检测出乳腺癌,是提高患者生存率的关键^[10,11]。超声检测是诊断乳腺癌的常规手法之一。随着彩色多普勒超声仪器性能变好,使得乳腺超声检查更准确。有研究称,多普勒超声结合二维常规检查,具有更高的临床价值^[12-14]。有研究显示,单独采用彩色多普勒超声将会有 >15% 的乳腺癌被漏诊,而错失了最佳治疗时机^[15,16]。本研究彩色多普勒超声发现误诊者是 5 例,其中中间交叉型肿块 3 例。因此,为了增加乳腺癌被检出的概率及诊断的敏感度,减少漏诊情况,有必要结合其他检测方法,从而改进超声检测的不足。

血清肿瘤标志物在人体的细胞从正常迈向恶化的进程中,

出现细胞某些表层脂类及糖蛋白等发生改变,体现在肿瘤细胞表面关联抗原表达提升,是反映肿瘤存在的化学类物质^[17]。一般处亚临床状态时就在患者血液中出现,并随着病情的恶化而含量越来越高,所以可作为检查肿瘤的辅助手段^[18]。CEA 是一种腺癌相关的肿瘤标志物,有研究显示,其可以用于乳腺癌高危人群筛查、疗效评价、预测癌症复发或者转移等^[19];CA15-3 是目前在临床上应用较多的乳腺癌血清标志物,有研究显示它可以用来乳腺癌的常规诊断、疗效分析及术后状况检查等^[20]。本研究发现,良性肿瘤患者血清 CEA、CA-153 水平分别为(3.12 ± 0.09) ng/mL、(16.56 ± 0.69) U/mL 低于恶性肿瘤患者的(10.43 ± 0.54) ng/mL、(40.39 ± 1.23) U/mL,比较差异有统计学意义($P < 0.05$),与以上文献报道一致^[19,20],提示恶性肿瘤患者血清 CEA、CA-153 水平会显著上升。虽然已有研究找出多种和乳腺癌相关的肿瘤标志物,但单采用一种检查的敏感都均较

差,特别在早期病人更易出现漏检情况,因此临床不单独采用一种肿瘤标志物检测乳腺癌。本研究发现超声联合血清 CEA、CA-153 检测的敏感性和准确性均高于单一检测方法,差异具有统计学意义($P<0.05$),提示超声结合 CEA 和 CA15-3 检测乳腺癌患者,更能提高检出率。

综上,乳腺癌病人使用彩色多普勒超声检查时,联合血清 CEA、CA15-3 检测可弥补单独使用一种方法的不足,提高检查方法的敏感性和准确性,降低漏诊率,有很大的临床借鉴意义。

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