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高频超声引导下乳腺钙化微创切除活检的临床价值分析

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摘要 目的:评价高频超声引导下乳腺钙化微创切除活检术的临床应用价值。**方法:**选取我院 2012 年 9 月至 2014 年 9 月收治的 66 例乳腺钙化患者,患者均行高频超声引导下的微创切除活检;分析乳腺钙化取出的活检成功率、病理结果及钙化灶微创活检的临床影响因素。**结果:**乳腺钙化灶的活检成功率为 72.9%(51/70),弥散性钙化 46 侧、成功率为 65.2%(30/46),钙化伴肿块 24 侧、成功率为 87.5%(21/24);钙化范围 ≤ 5 mm 钙化取出活检成功率为 55.9%,而钙化范围 >5 mm 为 88.9%;经 X^2 检验单因素分析,钙化取出活检成功率与钙化类型和钙化范围有关($P<0.05$);Logistic 多因素回归分析发现钙化灶的类型和范围是影响钙化灶微创活检的主要因素($P<0.05$)。**结论:**高频超声引导下乳腺钙化微创切除活检成功率与钙化类型和钙化范围有关,其中钙化范围 >5 mm 成功率最高,有较好的临床价值。

关键词:高频超声;乳腺;钙化;微创切除

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Clinical Value Analysis of Minimally Invasive Excision and Biopsy of Breast Calcification Under High Frequency Ultrasound Guidance

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ABSTRACT Objective: To evaluate clinical value analysis of minimally invasive excision and biopsy of breast calcification under high frequency ultrasound guidance. **Methods:** 66 cases of patients with breast calcification who treated in our hospital from 2012 September to September 2014 were selected, all patients underwent minimally invasive excision and biopsy using under high frequency ultrasound guidance; Removed biopsy success rate of breast calcification, pathological results and clinical factors of calcification of minimally invasive biopsy were analyzed. **Results:** The success biopsy rate of breast calcification was 72.9% (51/70), the success rate of diffuse calcification in 46 side, was 65.2%(30/46), the success rate of calcification with mass in 24 side, was 87.5% (21/24); Remove biopsy success rate of calcification range of ≤ 5 mm was 55.9%, and >5 mm was 88.9%; The single factor analysis showed remove biopsy success rate of was related to the type and rang of calcification ($P<0.05$); Logistic multi factor regression analysis found that type and rang of calcification was a main factor affecting the calcification of minimally invasive biopsy ($P<0.05$). **Conclusion:** The success rate of minimally invasive biopsy of breast calcification under high frequency ultrasound guided is related to type and rang of calcification, and calcification range of >5 mm with the highest success rate, it has good clinical value.

Key words: High frequency; Breast; Calcification; Minimally invasive excision

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前言

微钙化灶是乳腺癌的重要影像学特征,许多微钙化是乳腺导管内癌的首要表现,因此乳腺含钙化病变的诊断和治疗现在日益成为临床医师关注的问题^[1,2]。由于乳腺 X 线检查在临床上的广泛应用,一些在临床上不可触及病灶的检出率逐渐升高^[3,4]。有文献报道乳腺 X 线检查检出可疑恶性病灶的确诊恶性

率为 9%-63%不等^[5,6]。但是乳腺 X 线检查无法检出一些微小的病灶,随着高频超声技术的发展,对微小病灶的分辨率越来越高,图像也越来越清晰,在一定程度上弥补了乳腺 X 线检查的不足,使显示乳腺内微小钙化成为了可能^[7]。有文献报道高频超声能清晰显示 <1 cm 的微钙化灶^[8]。目前乳腺钙化微创切除活检术已经广泛应用于临床上,其比一般的穿刺活检和传统开放手术具有更成功更准确的优越性,且术后不留瘢痕,美容效果甚佳^[9]。本文旨在探讨高频超声引导下的乳腺钙化微创切除活检术的临床应用价值。

1 资料与方法

1.1 一般资料

选取我院 2012 年 9 月至 2014 年 9 月收治的 66 例行乳腺

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X线片发现钙化的患者,其中年龄 26-63 岁,平均年龄 39.6 岁;乳腺胀痛 26 例,乳头溢液 22 例,无症状 18 例;所有患者均为女性且钙化灶均能在高频超声下显示。其中单侧乳腺钙化 62 例,双侧乳腺钙化 4 例,共 70 侧乳腺钙化病灶。经乳腺 X 线片显示,钙化范围为 2 mm-60 mm,平均 12.1 mm。根据美国放射学会制定的乳腺超声诊断标准(BI-RADS-US)^[10],将全部乳腺钙化病灶分为 BI-RADS 3 级 20 侧,4a 级 32 侧,4b 级 7 例,4c 级 5 侧,5 级 6 侧。

1.2 仪器设备

超声仪采用 Siemens Acuson antares 型彩超,变频线阵探头,探头频率 5~13 MHz。真空辅助活检系统为安珂(EnCor)真空辅助全自动乳腺微创旋切系统,该系统由槽式旋切刀、真空吸引泵、控制手柄和相对应的软件组成,本次研究使用 8G 旋切刀。

1.3 操作方法

平卧位,充分暴露双乳,启动乳腺扫查专用超声模式,探头以乳头为中心做连续多切面扇形扫查以探测乳腺病灶,着重检查乳腺 X 线片提示的钙化灶区域,多角度移动探头,以显示钙化灶,并储存好图像。常规消毒,辅巾,1%利多卡因 10-20 cm 联合肾上腺素局部浸润麻醉。在超声引导下,选择恰当角度,分别注射在乳腺钙化灶上方皮下及乳房后间隙。在预穿刺点用尖刀切开皮肤 2 mm-4 mm,在超声监视下,用旋切刀行扇形反复旋转切割乳腺钙化病灶,进行多次多处旋切,直至病灶在超声下消失,明确无残留后终止旋切。用真空抽吸以清除旋切过程中和拔出旋切刀前出现的局部积血,穿刺点皮肤小切口用止血贴粘合。操作完成后局部压迫 10 min-15 min,用绷带加压包扎 24 h。对所取标本均送病理检查,并与乳腺 X 线片进行对比分析。如果活检标本见钙化灶,则视为活检成功。

1.4 术后随访

通过与患者通电话的方式进行术后随访,在术后 3-6 个月,电话告知患者来院进行乳腺超声和乳腺 X 线检查,术后 6

个月来院进行乳腺超声检查,每 12 个月来院行乳腺 X 线检查。

1.5 统计学处理

使用 SPSS16.0 统计软件包进行数据的统计分析,影响钙化灶微创活检的单因素分析采用 χ^2 检验,采用 Logistic 回归模型进行多因素回归分析, $P<0.05$ 认为差异有统计学意义。

2 结果

2.1 活检情况与病理结果分析

本次研究的 70 侧乳腺钙化病灶超声检查结果显示,钙化伴肿块 24 侧,弥散性钙化 46 侧。X 线片见钙化病灶共 51 侧,其中 BI-RADS 3 级 14 侧,4a 级 19 侧,4b 级 7 例,4c 级 5 侧,5 级 6 侧,钙化取出的活检成功率为 72.9%(51/70),术后病理结果:纤维腺瘤 19 侧,间质胶原化 6 侧,乳头状瘤 4 侧,腺病合并乳管扩张 11 侧,导管内癌 7 侧,不典型增生 4 侧。另外 19 侧 X 线片显示未见钙化灶,其中 BI-RADS 3 级 6 侧,4a 级 13 侧,术后病理结果:纤维腺瘤 3 侧,间质胶原化 1 侧,乳头状瘤 1 侧,腺病合并乳管扩张 14 侧。

2.2 术后随访结果

术后随访行乳腺 X 线检查,结果发现 3 侧原乳腺钙化灶消失,4 侧 BI-RADS 4a 级经乳腺 X 线复查后,确定评级降为 BI-RADS 3 级。所有病例结果均为良性病变,且在随访 6-12 个月未见恶性肿瘤。

2.3 影响钙化灶微创活检的单因素分析

本次研究中弥散性钙化 46 侧,活检成功率为 65.2%(30/46),钙化伴肿块 24 侧,活检成功率为 87.5%(21/24),两组活检成功率比较,差异有统计学意义($P<0.05$)。钙化范围 ≤ 5 mm 钙化取出活检成功率为 55.9%,而钙化范围 >5 mm 的钙化取出活检成功率为 88.9%,两组的差异有统计学意义($P<0.05$)。经 χ^2 检验单因素分析,钙化取出活检成功率与钙化类型和钙化范围有关($P<0.05$),详见表 1。

表 1 钙化灶微创活检的单因素分析

Table 1 Univariate analysis of calcification minimally invasive biopsy

指标 Indexes	成功率 Success rate	χ^2	P
年龄(岁) Age(years)	>40 28(80.0%) ≤ 40 23(65.7%)	1.806	0.179
BI-RADS 分级 BI-RADS classification	3 14(70.0%) 4 31(70.5%) 5 6(100%)	0.015	0.902
钙化部位 Calcification site	左侧 Left 26(72.2%) 右侧 Right 25(73.5%)	2.446	0.135
钙化范围 Calcification range	≤ 5 mm 19(55.9%) >5 mm 31(88.9%)	3.960	0.047
钙化类型 Calcification type	弥散性钙化 Diffuse calcification 30(65.2) 钙化伴肿块 Calcification with mass 21(87.5)	9.633	0.002

2.4 影响钙化灶微创活检的 Logistic 回归分析

采用 Logistic 回归模型对影响钙化灶微创活检的年龄,钙化灶部位,钙化灶类型,钙化灶分级和钙化灶范围等因素进行

多因素回归分析,结果发现钙化灶类型和钙化灶范围是影响钙化灶微创活检的主要因素($P<0.05$),详见表 2。

表 2 钙化灶微创活检的 Logistic 回归分析

Table 2 Logistic regression analysis of calcification minimally invasive biopsy

自变量 Argument	β	标准差 Standard deviation	Wald	自由度 Freedom	P	OR (95%CI)
钙化灶类型 Calcification type	2.479	0.813	9.297	1	0.002	11.925 (2.424-58.665)
钙化灶范围 Calcification range	2.760	0.745	13.745	1	0.000	15.803 (3.673-67.992)

3 讨论

有报道显示乳腺检查的妇女中,其中的 1/3-2/3 的患者可以发现乳腺钙化,其发生率高达 30%-50%^[11],更有报道显示临床上 80%的乳腺钙化灶是良性病变,恶性乳腺钙化灶只占 20%,且 BI-RADS 4 级和 5 级发展成恶性钙化的可能性极大,而 BI-RADS 3 级病变为恶性钙化的可能性<2%^[12]。乳腺钙化的特征是钙化微粒极小,直径大约为 10 μm -500 μm 之间,一般情况下<1000 μm ^[13-15]。传统治疗方法是外科手术切除,但该手术方法对部位较深的病灶切除存在很大的困难且术后体表会留下疤痕,影响美容效果^[16]。随着医学科学技术的飞速发展,特别是超声技术在临床诊断上的运用,其对微小病灶的分辨率越来越高,使显示乳腺内微小钙化成为了可能。理论上探头频率为 10 MHz 的变频频线阵探头其最大分辨率为 0.075 mm,而乳腺钙化的大小一般为 0.1 mm-0.5 mm 之间,足以显示乳腺内的微小钙化。国内何劲松等人的研究结果显示^[17],24 例乳腺微小钙灶患者均在高频超声引导下一次活检成功,且在高分辨率声像图上可视性进行,定位准确,病灶切除完全、有效。

本次研究选取我院 2012 年 9 月至 2014 年 9 月收治的 66 例乳腺钙化患者,对全部患者行高频超声引导下的微创切除活检。结果显示,乳腺钙化灶的活检成功率达到了 72.9%,弥散性钙化和钙化伴肿块的活检成功率分别为 65.2%和 87.5%。钙化范围 ≤ 5 mm 钙化取出活检成功率为 55.9%,而钙化范围 >5 mm 的钙化取出活检成功率达到 88.9%。以上充分表明高频超声引导下的微创切除活检具有比传统的手术方法更具准确性和稳定性,与国外相关报道一致^[18,19]。另经卡方检验单因素分析发现,钙化取出活检的成功率与患者的年龄、钙化部位、钙化分级无相关性,而与钙化类型和钙化范围有关,而 Logistic 多因素回归分析发现钙化灶类型和钙化灶范围是影响钙化灶微创活检的主要因素,这表明钙化取出活检的成功与否跟钙化灶的类型和范围关系很大,与 Manenti G 等人的研究一致^[20]。

综上所述,高频超声引导下乳腺钙化微创切除活检成功率高,且安全可靠,有较好的临床价值,值得在临床上推广。

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