

ORIGINAL ARTICLE

Radial scars without atypia in percutaneous biopsy specimens: Can they obviate surgical biopsy?☆



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Received 4 December 2016; accepted 13 April 2017

Available online 1 August 2017

KEYWORDS

Radial scar;
Complex sclerosing lesion;
Breast cancer;
Percutaneous biopsy;
Surgical biopsy

Abstract

Objective: To evaluate the need for surgical biopsy in patients diagnosed with radial scars without atypia by percutaneous biopsy.

Material and methods: In this retrospective observational study, we selected patients with a histological diagnosis of radial scar in specimens obtained by percutaneous biopsy during an 8-year period. The statistical analysis was centered on patients with radial scar without atypia (we assessed the radiologic presentation, the results of the percutaneous biopsy, and their correlation with the results of surgical biopsy and follow-up) and we added the patients with atypia and cancer in the elaboration of the diagnostic indices.

Results: We identified 96 patients with radial scar on percutaneous biopsy; 54 had no atypia, 18 had atypia, and 24 had cancer. Among patients with radial scar without atypia, there were no statistically significant differences between patients who underwent imaging follow-up and those who underwent surgical biopsy ($p > 0.05$). The rate of underdiagnosis for percutaneous biopsy in patients without atypia was 1.9 per cent. The rates of diagnosis obtained with percutaneous biopsy in relation to follow-up and surgical biopsy in the 96 cases were sensitivity 92.3 per cent, specificity 100 per cent, positive predictive value 100 per cent, negative predictive value 97.2 per cent, and accuracy 97.9 per cent. The area under the ROC curve was 0.96 ($p < 0.001$), and the kappa concordance index was 0.95 ($p < 0.001$).

Conclusions: We consider that it is not necessary to perform surgical biopsies in patients with radial scars without atypia on percutaneous biopsies because the rate of underestimation is very low and the concordance between the diagnosis reached by percutaneous biopsy and the definitive diagnosis is very high.

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☆ Please cite this article as: Mesa-Quesada J, Romero-Martín S, Cara-García M, Martínez-López A, Medina-Pérez M, Raya-Povedano JL. Cicatriz radial sin atipia en biopsia percutánea. ¿Puede evitarse la biopsia quirúrgica? Radiología. 2017;59:523–530.

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PALABRAS CLAVE

Cicatriz radial;
Lesión esclerosante
compleja;
Cáncer de mama;
Biopsia percutánea;
Biopsia quirúrgica

Cicatriz radial sin atipia en biopsia percutánea. ¿Puede evitarse la biopsia quirúrgica?**Resumen**

Objetivo: Evaluar la necesidad de biopsia quirúrgica en pacientes diagnosticadas por biopsia percutánea de cicatriz radial sin atipia.

Material y métodos: Realizamos un estudio observacional retrospectivo y seleccionamos las pacientes con diagnóstico histológico en biopsia percutánea de cicatriz radial durante un periodo de 8 años. El análisis estadístico principal se centró en pacientes con cicatriz radial sin atipia (valoramos la presentación radiológica, los resultados de la biopsia percutánea y su correlación con la biopsia quirúrgica y seguimiento) y añadimos a las pacientes con atipia y cáncer en la elaboración de índices diagnósticos.

Resultados: Identificamos 96 pacientes con cicatriz radial en biopsia percutánea. Cincuenta y cuatro no presentaban atipia, 18 asociaban algún tipo de atipia y 24, cáncer. No hubo diferencias estadísticas significativas al comparar las pacientes en seguimiento radiológico con aquellas que se sometieron a biopsia quirúrgica en el grupo sin atipia ($p > 0,05$). La tasa de infraestimación de la biopsia percutánea en pacientes sin atipia fue del 1,9%. Los índices diagnósticos obtenidos para la biopsia percutánea en relación con el seguimiento y la biopsia quirúrgica en los 96 casos fueron: sensibilidad, 92,3%; especificidad, 100%; valor predictivo positivo, 100%; valor predictivo negativo, 97,2%; y exactitud, 97,9%. El área bajo la curva ROC fue de 0,96 ($p < 0,001$) y el índice de concordancia kappa de 0,95 ($p < 0,001$).

Conclusión: Consideramos que no es necesario realizar biopsia quirúrgica en pacientes diagnosticadas de cicatriz radial sin atipia en biopsia percutánea, ya que la tasa de infraestimación es muy baja y existe un elevado grado de concordancia entre la biopsia percutánea y el diagnóstico definitivo.

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Introduction

The radial scar (RS) is a histological entity characterized by one fiber-elastic center continuing glandular elements from which ductal and lobular structures in a "starry sky" configuration irradiate.¹⁻³ Sizes >1 cm are called "complex sclerosing lesions",² although this term and the term radial scar are used interchangeably.

The radiological appearance of RS is undistinguishable from invasive carcinomas.⁴ When it is seen in the mammogram, it is common to see a distortion of the architecture (radiolucent core and spiculae irradiating from this core and towards the periphery).⁵ However, it may also appear as nodules, microcalcifications, or focal asymmetries.⁶ Its prevalence is around 2 per cent in the percutaneous biopsies performed to non-palpable lesions.⁷

Benign breast lesions may be categorized into: non-proliferative, proliferative without atypia, and proliferative with atypia. RS may be associated with proliferative lesions without atypia, and proliferative lesions with atypia, cancer.^{8,9}

The increased risk of cancer in proliferative lesions with atypia has been well documented in numerous studies, up to 4.4 times higher than that of the general population.^{1,10} Quantifying the risk of breast cancer in proliferative lesions without atypia is a common issue, which is why the management of patients diagnosed with RS without atypia through a percutaneous biopsy is still controversial.⁶ Some authors believe that it is a benign lesion with no risk of malignant

transformation,^{3,11,12} while others believe that it is a pre-malignant lesion precursor of breast cancer.^{13,14}

The usual management of RS without atypia diagnosed through a percutaneous biopsy has been the surgical biopsy for some time now.^{4,5,15,16} However, recent evidence suggests that surgical resection is not necessary if the RS does not associate epithelial atypia.^{17,18}

The main goal of this study is to assess the need for surgical biopsy after the diagnosis of RS without atypia through a percutaneous biopsy, in order to be able to determine if the surgical intervention may be avoided.

Material and methods

We conducted one retrospective observational trial after obtaining the approval from our center ethics committee. We selected those patients whose anatomopathological report of the percutaneous biopsies performed showed radial scars, sclerosing radial lesions, or complex sclerosing lesions in order to identify cases of RS during a period of 8 years (from 2005 through 2012). The main statistical analysis was performed with the group of patients without atypia. Patients with signs of malignancy and atypia only, and patients without atypia were included in the study while conducting the concordance analyses and diagnostic indices.

Patients diagnosed with RS through the percutaneous biopsy, and those who did not undergo surgical biopsies, or were not followed were excluded.

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