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ORIGINAL ARTICLE

Use of individual containers for prostate biopsy samples: Do we gain diagnostic performance?☆

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Abstract

Objective: Prostate cores from transrectal biopsies are usually sent in separate vials for pathological processing. Although this is a common practice, there are controversial studies on its usefulness.

We wanted to compare the rate of prostate cancer diagnosis between processing samples in 2 containers and processing them in individual containers to see if there are differences. Our secondary objective was to check the rate of diagnosis of various tumor subtypes in each of the 2 groups.

Material and methods: A retrospective observational study was conducted of 2601 cases of prostate biopsies. Ten cores were extracted in each biopsy. We divided the sample into 2 groups: biopsies sent in 2 containers to the department of pathology (left and right lobes) or sent in 10 (one for each cylinder), according to the different criteria used in our center in the past.

We then classified the cases according to the absence of neoplasia, insignificant tumor (involvement of just 1 cylinder, <5%, Gleason score <7), Gleason 6 or Gleason ≥7. A bivariate statistical analysis was performed using the chi-squared test.

Results: A total of 1777 participants were included in the 2-container group, and 824 were included in the 10-container group. We diagnosed a rate of 32.4% of cancers in the 2-container group and 40% in the 10-container group, a difference that was statistically significant ($P < 0.001$).

The insignificant carcinomas were diagnosed more often in the 2-container group than in the 10-container group (6.4% vs. 4.3%, respectively; $P = 0.03$). Samples with a Gleason score of 6 were diagnosed more often in the 10-container group than in the 2-container group (11.9% vs. 8.1%, respectively; $P = 0.002$). The same occurred with the Gleason score ≥7 (23.8% in the 10-container group vs. 17.9% in the 2-container group; $P < 0.001$).

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Conclusions: We diagnosed more prostate cancers when sending biopsied cores in individual containers. Once the procedure was conducted, we also observed in our series a reduction in the diagnoses of insignificant carcinoma to the detriment of an increased diagnosis of not insignificant carcinomas.
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PALABRAS CLAVE
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Uso de contenedores individuales para las muestras obtenidas en biopsia prostática: ¿ganamos en rendimiento diagnóstico?

Resumen

Objetivo: Los cilindros de próstata obtenidos en la biopsia transrectal suelen enviarse en viales separados para su procesamiento anatomopatológico. Aunque es una práctica frecuente, existen trabajos controvertidos sobre su utilidad.

Se quiso comparar el porcentaje de diagnóstico de cáncer de próstata al procesar las muestras en 2 contenedores o en contenedores individuales, para comprobar si existen diferencias. Como objetivo secundario se han comprobado los porcentajes de diagnóstico de varios subtipos de tumores en cada uno de los 2 grupos.

Material y métodos: Estudio retrospectivo observacional sobre 2.601 casos de biopsias prostáticas. Se extrajeron 10 cilindros en cada biopsia. Dividimos la muestra en 2 grupos: envío de biopsia al servicio de anatomía patológica en 2 recipientes (lóbulo izquierdo y derecho) o en 10 (uno por cada cilindro), según diferente criterio utilizado en nuestro centro en varias épocas.

Posteriormente se clasificaron los casos según ausencia de neoplasia, tumor insignificante (afectación de un solo cilindro, < 5%, Gleason < 7), Gleason 6, Gleason ≥ 7. Análisis estadístico bivariante mediante Chi-cuadrado.

Resultados: Se incluyeron 1.777 sujetos en el grupo de 2 contenedores y 824 en el de 10. Se diagnosticaron un 32,4% de cánceres en el grupo de 2 recipientes y un 40% en el de 10, existiendo una diferencia estadísticamente significativa (p < 0,001).

Los carcinomas insignificantes se diagnosticaban con más frecuencia en el grupo de 2 botes, el 6,4% frente al 4,3% en el de 10 (p = 0,03). Los Gleason 6 se diagnosticaban más en el grupo de 10 contenedores en comparación con el de 2 (11,9% frente al 8,1% [p = 0,002]). Lo mismo sucedía con los Gleason ≥ 7, el 23,8% en el grupo de 10 viales frente al 17,9% en el de 2 (p < 0,001).

Conclusiones: Se diagnostican más cánceres de próstata al enviar los cilindros biopsiados en botes individuales. Además, llevando a cabo esta maniobra, hemos observado en nuestra serie una disminución de los diagnósticos de carcinoma insignificante en detrimento de un mayor diagnóstico de carcinomas no insignificantes.
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Introduction

Transrectal prostate biopsy is a common intervention in the daily practice of urologists. Many aspects have been studied to optimize the diagnostic performance of prostate cancer by means of this procedure, such as the appropriate number of cylinders to be obtained, the location thereof, or the biopsy criteria for seminal vesicles.[1,2] However, there is a little collected aspect in the literature, but very important in the optimal biopsy result: the joint or individualized processing of prostate cylinders for histological examination.

The processing of the samples after the biopsy may have an impact on the diagnosis, and therefore on the subsequent therapeutic decision and prognosis of the patient. The urologist should play an active role for this diagnostic method to be as accurate as possible, always indicating clinical information to the pathologist (including PSA levels and biopsy purposes), obtaining properly from the cylinders, and carrying out an appropriate previous management and subsequent to the biopsy.[3]

This particular fact about the use of individual containers for subsequent histological examination is contained in the clinical guidelines of the European Association of Urology, stating that the samples are usually sent in separate vials for further study.[4] However, a strict criterion to be followed is not expressed or a benefit demonstrated in reference to a higher diagnostic is completed.

Although there are other studies comparing the influence of the use of joint or individualized vials in prostate biopsy vials for different aspects, such as the detection of extracapsular involvement with transrectal biopsy, there is no weighty work aimed at concluding whether the different use of containers influences higher diagnosis.[5] Thus, based on a large sample of patients biopsied at our center, we set as our primary objective to evidence if there is a difference in the diagnostic performance of prostate biopsy when making an individualized processing of the cylinders, using

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