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ORIGINAL ARTICLE

When to biopsy seminal vesicles☆

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KEYWORDS
Seminal vesicles;
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Abstract
Objectives: The involvement of seminal vesicles in prostate cancer can affect the prognosis and determine the treatment. The objective of this study was to determine whether we could predict its infiltration at the time of the prostate biopsy to know when to indicate the biopsy of the seminal vesicles.
Material and methods: Observational retrospective study of 466 patients who underwent seminal vesicle biopsy. The indication for this biopsy was a prostate-specific antigen (PSA) level greater than 10 ng/ml or an asymmetric or obliterated prostatoseminal angle. The following variables were included in the analysis: PSA level, PSA density, prostate volume, number of cores biopsied, suspicious rectal examination, and preservation of the prostatoseminal angle, studying its relationship with the involvement of the seminal vesicles.
Results: Forty-one patients (8.8%) had infiltrated seminal vesicles and 425 (91.2%) had no involvement. In the univariate analysis, the cases with infiltration had a higher mean PSA level ($P < .01$) and PSA density ($P < .01$), as well as a lower mean prostate volume ($P < .01$). A suspicious rectal examination (20.7% of the infiltrated vesicles) and the obliteration or asymmetry of the prostatoseminal angle (33.3% of the infiltrated vesicles) were significantly related to the involvement ($P < .01$). In the multivariate analysis, we concluded that the probability of having infiltrated seminal vesicles is 5.19 times higher if the prostatoseminal angle is not preserved ($P < .01$), 4.65 times higher for PSA levels > 19.60 ng/dL ($P < .01$) and 2.95 times higher if there is a suspicious rectal examination ($P = .014$). Furthermore, this probability increases by 1.04 times for each unit of prostate volume lower ($P < .01$). The ROC curves showed maximum sensitivity and specificity at 19.6 ng/mL for PSA and 0.39 for PSA density.
Conclusions: In this series, greater involvement of seminal vesicles was associated with a PSA level $\geq$ 20 ng/ml, a suspicious rectal examination and a lack of prostatoseminal angle preservation.

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PALABRAS CLAVE
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¿Cuándo biopsiar las vesículas seminales?

Resumen

Objetivos: La afectación de las vesículas seminales en el cáncer de próstata puede afectar al pronóstico y condicionar el tratamiento. El objetivo es conocer si podemos predecir su infiltración en el momento de realizar la biopsia prostática para saber cuándo hay que indicar la biopsia de las mismas.

Material y métodos: Estudio retrospectivo observacional sobre 466 pacientes a los que se les realizó biopsia de vesículas seminales. La indicación de esta biopsia fue: PSA mayor de 10 ng/ml o ángulo prostatoseminal no conservado. En el análisis se incluyeron las siguientes variables: PSA, densidad de PSA, volumen prostático, número de cilindros biopsiados, tacto rectal sospechoso y conservación del ángulo prostatoseminal, estudiándose su relación con la afectación de las vesículas seminales.

Resultados: Cuarenta y un sujetos (8,8%) con vesículas seminales infiltradas y 425 (91,2%) libres de afectación. En el análisis univariado los casos con infiltración tenían una media superior en PSA ($p < 0,01$) y densidad de PSA ($p < 0,01$), además de una media de volumen prostático menor ($p < 0,01$). El tacto rectal sospechoso (20,7% de las infiltradas) y la no conservación del ángulo prostatoseminal (33,3% de las infiltradas) se relacionaron de forma significativa con la afectación ($p < 0,01$). En el análisis multivariado se concluye que la probabilidad de tener vesículas seminales infiltradas es 5,19 veces mayor si el ángulo prostatoseminal no está conservado ($p < 0,01$), 4,65 veces mayor si el PSA > 19,60 ng/dl ($p < 0,01$) y 2,95 veces mayor si existe tacto rectal sospechoso ($p = 0,014$). Asimismo, aumenta en 1,04 veces por unidad de volumen menor ($p < 0,01$). Las curvas ROC mostraron máxima sensibilidad y especificidad en 19,6 ng/ml para PSA y 0,39 para densidad de PSA.

Conclusiones: En esta serie se asocian con mayor afectación de vesículas seminales un PSA mayor o igual a 20 ng/ml, un tacto rectal sospechoso, o la ausencia de conservación del ángulo prostatoseminal.

Introduction

The therapeutic management of localized prostate cancer involves assessing various aspects; from PSA levels to the Gleason obtained in the prostate biopsy, going through tumor burden or patient preferences.[1] The infiltration of the seminal vesicles may have prognostic implications and may cause the urologist to opt for one or another form of treatment.

Infiltration of these organs results in extracapsular extension of the prostate carcinoma, reaching a stage T3b in the UICC TNM classification. This is important both in the prognosis and in the management that will be carried out with the patient, since this involvement is predictive of local recurrence and distant metastasis.[2] Thus, we can understand the importance in detecting infiltration of seminal vesicles.

To find this extracapsular involvement, several methods can be used. One is the simple visualization in transrectal ultrasound, although by means of this technique, about 60% of pT3 tumors are not detected.[3] We also studied endorectal MRI, concluding that it is a reliable method if used by expert genitourinary radiologists.[4,5]

The seminal vesicle biopsy is another tool that can be used to increase the accuracy of preoperative staging of the disease.[6] It is not recommended as routine screening, but it is recommended in patients with high probabilities of extraprostatic involvement. Some authors recommend this type of biopsy in cases of PSA greater than 20 ng/ml, or when there is a Gleason of 7 or more[7]; others defend seminal vesicle biopsy in cases of PSA greater than 10.[8] What is certain is that individuals with a PSA between 15 and 20 ng/ml have a possibility of infiltration of vesicles of 20–25%.[9] Other data have been linked to the positivity of involvement of the seminal vesicles, such as the percentage of tissue affected by tumor in the biopsy[10] or a greater number of tumor biopsies.[11]

Therefore, there are no strict indications to follow to biopsy seminal vesicles. The main objective of the study was to identify clinical factors predictive of seminal vesicle involvement in prostate biopsy.

Materials and methods

Retrospective study in which we collected in the database of prostate biopsies of our department all the seminal vesicle biopsies performed for eight years, from April 2004 to May 2012. During this period, the indication for biopsy of seminal vesicles was: PSA greater than 10 ng/ml[8] or absence of preservation of the prostatic-seminal vesicle angle (PSVA) on transrectal ultrasound. In all patients, we performed the protocol used in our center for performing any transrectal prostate biopsy: antibiotic prophylaxis with 500 mg ciprofloxacin, one every 12 h for 5 days, starting the night before the test; administration of a cleansing enema the morning of the test, biopsy with 18-G needle and 25-cm