Active surveillance in prostate cancer: importance of histopathological findings in needle biopsy

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In the present issue of Jornal Brasileiro de Patologia e Medicina Laboratorial (JBPML), Andrade *et al.* convincingly show that the percentage of fragments with cancer in prostate needle biopsy is useful for predicting tumor extension in the radical prostatectomy specimen[1]. It is a simple and practical method, which may be used by all pathologists in daily practice.

The percentage or the number of affected fragments in prostate needle biopsy is also included in assessment criteria for low-risk cancer in patients who could embark on an active surveillance program. The latter conduct has been highly recommended in the United States, according to recent publications.

In 2011, the National Institutes of Health (NIH), of the United States, sponsored the State-of-the-Science conference, which discussed active surveillance in localized prostate cancer[4]. Thirteen institutions participated in it, among them, the Johns Hopkins University and the Harvard School of Public Health. With 23 conference speakers presenting data based on published studies, the main conclusions of the meeting were: 1) prostate cancer screening with prostate-specific antigen (PSA) identified a great number of men with low-risk disease; 2) because of the highly favorable prognosis of low-risk cancer, modifying the anxiety-provoking term cancer for this condition should be strongly considered; 3) treatment of low-risk prostate cancer with radical prostatectomy or radiation therapy causes adverse effects, such as impotence or urinary incontinence; 4) active surveillance is a viable option that should be offered to patients with low-risk cancer; 5) more than 100,000 men per year who receive the diagnosis of cancer in the United States are candidates for active surveillance. Nevertheless, many unanswered questions about active surveillance require further research and clarification, including: a) improvements in accuracy and consistency of the pathological diagnosis of prostate cancer; b) consensus about the best candidates for active surveillance; c) optimal protocols for active surveillance; d) optimal ways to communicate the option of active surveillance to patients; e) methods to assist patients' decision-making; f) reasons for acceptance or rejection of active surveillance; g) short- and long-term follow-up of active surveillance.

The core of the whole question is the dual biological behavior of prostate cancer: clinical and latent. In other words, once histologically detected, it may develop into cancer in any other location (clinical), evolve slowly, or even remain latent, so that patient dies with the cancer, not from it.

Needle biopsy findings that predict low-risk prostate carcinoma, in all the applied systems, have in common a Gleason score ≤ 6. Gleason grade 4 or 5 must not be present. There is no consensus, however, on other parameters. One of the most used criteria is that defined by Epstein, which includes clinical stage T1c, PSA density ≤ 0.15, final Gleason score ≤ 6 with no Gleason grade 4 or 5, no more than two biopsy fragments with cancer, involvement of no more than 50% of the fragment[2]. If these criteria are met, there is an 84% probability that the tumor is organ-confined, with Gleason 3 + 3 = 6 in the surgical specimen of an eventual radical prostatectomy.

Analyzing conclusion 2 of the NIH-sponsored conference, we observe a proposal to remove the anxiety-provoking term cancer from cases of low-risk carcinoma in prostate biopsy. The reason would be fear of the word cancer, resulting in a small number of patients

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who accept active surveillance: just 10% in the United States, according to data provided during the conference. This issue is of particular concern to pathologists. It is obvious that a Gleason 3 + 3 = 6 cancer, meeting criteria for low risk, is still cancer. What then would be the possible choices? Label a Gleason 3 + 3 = 6 adenocarcinoma as low-risk neoplasm?

The Johns Hopkins team offers an alternative[3]. They are not in favor of removing the word cancer, but of modifying the prognostic groups of final Gleason score, which would range between 2 and 10. Patients interpret the final score 6 (3 + 3) as intermediate risk, not low. However, if prognostic groups were considered from 1 to 5, the final score ≤ 6 would correspond to the lowest risk: ≤ 6 (I/V), 3 + 4 = 7 (II/V), 4 + 3 = 7 (III/V), 8 (IV/V) and 9-10 (V/V). Still according to the study conducted at Johns Hopkins[5], the five-year recurrence-free survival rates of patients with final Gleason score at biopsy ≤ 6, 3 + 4 = 7, 4 + 3 = 7, 8 and 9-10 are 94.6%, 82.7%, 65.1%, 63.1% and 34.5%, respectively. For the Johns Hopkins team, this approach to final Gleason score 3 + 3 = 6 would help patients better accept active surveillance.

Regardless of any discussion or controversy, when prostate needle biopsy reveals low-risk carcinoma according to Epstein criteria, it is always recommended to report this finding as a note in the pathology report.

REFERENCES

1. ANDRADE, R. T. *et al*. The percentage of affected fragments in needle biopsy in the assessment of pathological staging of prostate cancer. *J Bras Patol Med Lab*, v. 49, n. 5, p. 355-60, 2013.

2. BASTIAN, P. J. *et al*. Characteristics of insignificant clinical T1c prostate tumors. A contemporary analysis. *Cancer*, v. 101, n. 9, p. 2001-5, 2004.

3. CARTER, H. B. *et al*. Gleason score 6 adenocarcinoma: Should it be labeled as cancer? *J Clin Oncol*, v. 30, n. 35, p. 4294-6, 2012.

4. GANZ, P. A. *et al*. Role of active surveillance in the management of men with localized prostate cancer. *Ann Int Med*, v. 156, n. 8, p. 591-5, 2012.

5. PIERORAZIO, P. M. *et al*. Prognostic Gleason grade grouping: data based on the modified Gleason scoring system. *IBJU Int*, v. 111, n. 5, p. 753-60, 2013.