Evaluation of the effectiveness of the prostate biopsy at the Saint Jean De Dieu Hospital of Tanguiéta

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ABSTRACT

Introduction: Prostate cancer is the most common and the second leading cause of cancer death in men in most developed countries. Prostate biopsy remains the gold standard to confirm its diagnosis.

Material and Method: This is a prospective study during 6 months, starting from 1st of February to 31st of July 2022. It included all patients who underwent a prostate biopsy that was carried out either following a high tPSA or due to an abnormal digital rectal examination.

Results: We performed digitally guided biopsies in 32 patients from whom, average age was 72.43 years and elevation of total PSA was the main reason (71.88%) behind biopsies. The mean total PSA level was 45.69 ng/ml. The tissues removed were essentially prostate tissues, malignant in 28.12% of cases with adenocarcinoma as the only histological type.

Conclusion: Prostate biopsy remains the gold standard for the diagnosis of prostate cancer. When indicated in front of an abnormal digital rectal examination, the probabilities of positivity of the samples are high even in the case of digitally guided biopsies in an under-equipped environment.

Keywords
Biopsy, Cancer, Prostate.

Introduction
Prostate cancer is the most common cancer and the second leading cause of death developed countries [1]. Its incidence has been steadily rising in recent years due partially to the extension of life expectancy of the populations, and the lifestyle change of poor nations adopting more and more western foods rich in calories and lack of physical activities [2]. To this day, ultrasound guided transrectal biopsy remains the gold standard for the early diagnosis of prostate cancer [3]. However, in developing countries, this diagnosing technique is not widely available due to the lack of medical equipment. In Our present study of prostate biopsy, it was digitally guided , which therefore triggered our interest with the aim of confirming the diagnosis of prostate cancer with the histological findings of prostatic tissues, best choice for an elevated PSA value or an abnormal prostate during digital rectal examination (DRE) .

Materials and Methods
Our study is a descriptive retrospective one 2022 carried out at the general surgery department of the district hospital of Tanguieta from February 1st to July 31st, 2022. Our study included all patients who were treated for or who were under the suspicion of prostate cancer to whom prostate biopsy was performed and pathology reports were available. Exclusion criteria included

those patients who did not undergo prostate biopsy or those who lacked pathological reports following their biopsies. Data input and statistical analysis were conducted using Epi-info 7.2.2.6 and Microsoft Excel 2013.

Results
We have performed digitally guided biopsies in 32 patients. The mean age of the patients was 72.43 years. The high total PSA value was the primary indication for biopsies with 71.88% (n=23) of cases. The abnormal DRE was the reason behind prostate biopsy in 28.12 % (n=9) of cases. The mean total PSA value in our patients was 45,69 ng/l with extreme values ranging from 4 to 100,32 ng/ml. We have taken on average 10 biopsy samples in patients of extreme values ranging from 6 to 12. The tissue samples were essentially of prostate Origins. The anatomopathological report showed malignancy in 28.12 % of cases (n= 9). Adenocarcinoma was the only histological type identified in cases where prostate sample was found to be malignant [Table 1]. The biopsies performed following a positive DRE were positive in 77,78% of cases (Table 2). Out of the 9 samples of adenocarcinoma, 5 samples representing about 55,56% were grade 2 under the ISUP grading system.

Table 1: Distribution of different anatomopathological results.

Results	Total	Percentage (%)
Adenocarcinoma	9	28,12%
Adenofibromyoma	15	46,88%
Prostatitis	2	6,25%
Normal sample	6	18,75%
TOTALS	32	100,00%

Table 2: Distribution of the biopsy results by the clinical indications.

Results / Résultats	Negative n (%)	Positive n (%)	Total N (%)
Elevated total PSA	21 (91,30%)	2 (8,70%)	23 (100%)
Suspicious DRE	2 (22,88%)	7 (77,78%)	9 (100%)
Total	23 (71,88)	9 (28,12%)	32 (100%)

No incidents were reported while performing these examinations. Hematuria (in one case), urinary infection (in one case), Painful defecation (in one case) were the reported complications postbiopsy.

Discussion
The incidence of prostate cancer increases with age. The mean age of our patients was 72,43 years with extreme values ranging from 56 to 86 years old. These epidemiological findings were similarly reported by various other authors [4-6].

The accumulation of somatic mutations in the prostate cells occurring over time during the cell division processes increase with ageing [7]. This explains its high prevalence among the elderly population.

Prostate biopsy is indicated in two instances: an elevated tPSA (higher than 4 ng/ml) or in a case of abnormal DRE [8]. The main indication in our cases was an elevated tPSA. The mean value of tPSA in our study was 45,49 ng/ml. Our mean tPSA value was

higher than the one reported by Dehayni et.al in Morocco, which was 15,17 ng/ml.

Generally, in sub-Saharan Africa especially in rural areas where our study was based, self-medication and the lack of financial resources contribute to the late diagnosis [9]. Due to these reasons, patients come to outpatient clinics late with an advanced stage characterized also with an elevated tPSA. 10 samples were taken on average from our patients with extreme values ranging from 6 to 12. Our results were similar to those of Sataa et.al in Tunisia [3]. The tissue samples were largely consisting of adenofibromyoma (known also as benign prostatic hyperplasia) followed by adenocarcinoma (the only malignant histological type found). Other authors have been reporting similar findings in Benin and in other parts across the world [2,10]. In fact, adenocarcinoma is the most common histological type found in prostate cancer. In Senegal, Niang et al. have reported this single histological type among 164 samples [11].

Biopsies indicated following abnormal DRE were associated with higher positive results than biopsies indicated due to an elevated tPSA. It is worth noting that prostate cancer suspected following clinical examination can be an aggressive type even though tPSA is of normal value [7], thereby following an abnormal DRE, it is highly likely to find prostate cancer after biopsy.

Out of the 9 positive tissue samples, the most common type found was adenocarcinoma of grade 2, staged by ISUP grading system (Gleason 7: 3+4). These findings corroborated those reported by Seydou et al. in Benin. However, our results differ from those reported by Fall et al. in Senegal whose findings were predominantly of score 6 in the Gleason scoring system (ISUP 1) [1,2]. The hypothesis that the digitally guided biopsy remains essential in failure of doing it under the guidance of ultrasound was confirmed.

Conclusion
Prostate biopsy is the gold standard in the diagnosis of prostate cancer. In medical settings where there is lack of medical equipment, despite doing it blindly, digitally guided prostate biopsy remains a crucial alternative to encourage especially in the inability to undertake an ultrasound-guided biopsy especially where tPSA value is elevated or in cases of abnormal prostate palpated during digital rectal examination.

References
1. Fall B, Zeondo C, Sarr A, et al. Détection précoce du cancer de la prostate chez des apparentés de premier degré au Sénégal. Afr J Urol. 2015; 21: 225-229.
2. Seidou F, Akpo W, Flenon A, et al. Aspects histologiques des biopsies prostatiques à Cotonou. J S Biol Clin Bénin. 2019; 30: 28-31.
3. Sataa S, Mejri R, Mohamed C, et al. L'anesthésie Locale pour les Biopsies Prostatiques echoguidées : blocage nerveux périprostatique au niveau de l'apex versus gel de lidocaïne intrarectal. Étude randomisée sur 100 malades. La TUNISIE Med. 2010; 88: 217-222.

4. Dehayni Y, Habibi H, Balla B, et al. Capacité de la biopsie de la prostate à prédire le score réel du cancer de la prostate?. Af J Urol. 2016; 22: 259-263.

5. Khouaja K, Sorba NB, Bouslama A, et al. Une expérience de diagnostic individuel et précoce du cancer de la prostate dans le centre de la Tunisie. Prog Urol. 2005; 15: 255-259.

6. Loko F, Hodonou R, Akpaka R, et al. Valeur prédictive du PSA dans le diagnostic du cancer de la prostate chez les sujets Béninois. Int J Biol Chem Sci. 2011; 5: 515-523.

7. Terrier M, Terrier JE, Paparel P, et al. Epidémiologie, diagnostic et pronostic du cancer de la prostate. Méd Nucl. 2017; 41: 329-334.

8. Rozeta F, Hennequina C, Beauvala JB, et al. Recommandations françaises du Comité de Cancérologie de l'AFU : cancer de la prostate. Prog urol. 2018; 28: 81-132.

9. Alassani A, Cissé M, Saké A, et al. Motifs, facteurs de risque et conséquence du retard à la consultation chez les sujets atteints de paludisme simple à Bembèrèkè (Bénin) en 2019. Rev Mali infect Microbiol. 2021; 16: 1-5.

10. Yevi DMI, Hodonou F, Sossa J, et al. Diagnostic de la prostate à Cotonou : à propos de 109 cas. J rech sci Unv de Lomé. 2018; 20: 231-236.

11. Niang L, Ndoye M, Ouattara A, et al. Cancer de la prostate: quelle prise en charge au Sénégal?. Progrès en urologie. 2013; 23: 36-41.