4 Diagnosis of prostate cancer with transperineal ultrasound guided-template biopsy of prostate. Our experience on 603 cases

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Introduction & Objectives: Even though the first biopsy of prostate was done by transperineal method in 1922, while the first transrectal prostate biopsy was done 15 years later, the transrectal biopsy is nowadays the “golden standard” with regard to the detection of prostate cancer, but it is accepted that transrectal prostate biopsy still presents a reduces sensitivity and a false negative incidence rate of up to 31% has been reported.
There is a permanently growing interest of routine using of ultrasound guided transperineal prostate biopsy, due to multiple advantages, especially a decreased risk of infection, but also a superior rate of detection compared to transrectal ultrasound prostate biopsy.
The main objective is to prove the efficiency and the safety of routine using of transperineal ultrasound guided template prostate biopsy in order to diagnose prostate cancer.

Materials & Methods: A number of 603 patients who underwent first intent transperineal ultrasound guided template prostate biopsy, were prospectively studied. The data base included age of the patients, PSA level, prostatic volume, presence of clinical and biological suspicion of prostate cancer, histopathologic result as well as immediate and tardy post-procedure complications.
Biopsies were performed under local anaesthesia by free hand method, with one single perineal incision above the anus, sampling minimum 12 fragments based on a predefined template.

Results: The average age of the group was 69.8 years with a minimum age of 41 and a maximum age of 91 years.
The prostate cancer detection was 69.5%, with an increased ratio detection for those patients that underwent repeated biopsy 69.5% vs 72.14%.
The PSA mean value was 208.55 ng/ml with a minimum of 0.16 ng/ml and a maximum 14200 ng/ml. The average prostate volume is 57.2 cm3.
The group with a prostate smaller than 60 cm3 had a higher detection rate than the group with a bigger prostate volume (83.81% vs 44.54%) with a $p<0.0000001$.
Most cases had a high-grade tumor with a Gleason score higher than 8 (56.80%).
Complications rate was very low, with no infectious complications.

Conclusions: 1. Freehand ultrasound - guided template transperineal prostate biopsy has proven to be a safe diagnosis method, with a superior rate of detection compared to transrectal prostate biopsy and with very low rate of complications, such as serious infections, urethroragy and rectal bleeding, which can be avoided by performing transperineal prostate biopsy.
2. Transperineal prostate biopsy needs a longer learning curve than transrectal prostate biopsy.
3. Procedure well tolerated by patient under combined local anaesthesia (pudental and periprostatic nerv block)
4. Given the very good detection rate of prostate cancer due to easy access at anterior and transitional zone of the prostate, but also the reduces rate of complications as well as the low costs of the procedure.