Did You Know?

Prostate Cancer

Take-home message

- Very often prostate cancer progresses without symptoms, in some cases it can lead to urinary disorders.
- It is important to carry out the detection of this cancer by the rectal touch from 50 years or from 40 years if the genetic factors were highlighted.
- The blood Prostate Specific Antigen (PSA) is a complementary examination to detect a large number of new cancers.

• Prostate cancer develops as small nodules or protuberances on the surface of the prostate. This cancer is the most common cancer in men. With more than 71,000 new cases per year, prostate cancer is the first cancer in men in France.

Most men with prostate cancer are older than 45 years. This type of cancer frequency increases with age. The number of new annual cases is estimated at about 36.5 per 100,000 men worldwide. Adenocarcinoma is the most common form of prostate cancer. It accounts for about 95% of cases. The average age at diagnosis is 70 years.

The main risks of prostate cancer are aging, family history, a high-fat diet and alcohol. The evolution of the disease depends on the stage of the disease at the time of diagnosis.

Symptoms

- The appearance of blood in the urine or in the sperm and difficulty urinating.
- On an advanced stage, cancer can be responsible for pain in the anus and rectum.
- Risk of metastases in the bones and invasion of the bone marrow.

Possible treatments (in case of localized cancer)

- Radical prostatectomy: by a conventional opening or by laparoscopy (minimally invasive surgical technique with endoscope camera introduced in the surgical area).
- External or internal radiotherapy intended to destroy cancer cells.
- Brachytherapy: a form of radiotherapy which consists of implanting tiny radioactive sources directly into the prostatic tissue.

In Olea Sphere®?

MRI is necessary for the pre-operative assessment of prostate cancer.

The MRI Protocol is made of 3 sequences: one T2 weighted sequence, one diffusion weighted sequence (DWI) and sometimes one dynamic contrast enhanced sequence after gadolinium injection (DCE).

«Prostate» application makes it possible to access to morphological information and parametric maps such as ADC (Apparent Diffusion Coefficient). On malignant prostate lesions, ADC values are lower than in healthy tissue.

Thanks to «IVIM» plugin, diffusion images can be computed for high b values (electronic b values*).

Cancerous sites are more easily detected on non-acquired series: they appear clearly in hypersignal at b = 2000 s/mm² (see picture 1).

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*The maximum b value should be limited to avoid the Kurtosis effect

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