

# Prostate cancer/PGS

**Prostate cancer** is one of the most common malignancies in men.

## History

Prostate cancer does not remain in the remains, but because it quite often metastasizes to the bones. The deposits in the bones can be identified as traces of metastatic involvement of the skeleton in prostate cancer on the basis of a morphological analysis consisting mainly of an assessment of the X-ray image of the analyzed bone and on the basis of the study of microscopic morphological characteristics with an optical and electron microscope. The picture of metastatic bone involvement is quite characteristic for some types of tumors. For skeletal remains, proteomic analysis methods can also be used, as extracellular matrix proteins surrounded by hydroxyapatite, the inorganic component of bone mass, can be preserved for several centuries. The oldest demonstrable metastatic disease was demonstrated on the skeleton of an unknown Scythian<sup>[pozn. 1]</sup> kings found in a burial ground near the city of Arzhan in Siberia. According to an anthropological analysis of the remains, this man died between the ages of forty and fifty. The age of the remains is approximately 2700 years. <sup>[1][2]</sup>



Multiple osteoplastic foci of prostate cancer metastases. The disability is particularly visible in the sacrum, in the left hip bone (so in the picture on the right), in the left sciatic tubercle and in the proximal part of the left femur.

The first histopathological diagnosis of prostate cancer was established in 1853 by the British surgeon J. Adams. It is interesting that he considered prostate cancer to be a rare disease. The sharp contrast between the current state and the state in the mid-19th century is due to the following factors:

- Until the end of the 19th century, prostate cancer was not differentiated from other causes of lower urinary tract obstruction.
- The risk of cancer increases very rapidly with age. As age increases, the number of cases also increases progressively.
- Some factors of the so-called Western lifestyle are risk factors for prostate cancer.

Early detection of a disease with a good prognosis also contributes to the increase in prevalence. By comparison, in the mid-20th century, the typical patient with newly diagnosed prostate cancer was a 70-year-old man with metastatic skeletal or soft tissue involvement with a prognosis of one to two years.<sup>[3]</sup>

A breakthrough in therapy occurred in the 1940s, when Ch. B. Huggins (1901–1997) discovered that prostate cancer responds to removal of androgenic stimulation by castration or administration of estrogens. Oral antiandrogen therapy by administering oral estrogens thus became the first truly effective systemic antitumor therapy. His work was awarded the Nobel Prize in Medicine and Physiology in 1966.<sup>[3]</sup>

## Links

### Footnotes

1. Scythians is the designation of a group of nomadic tribes inhabiting Eastern Europe in ancient times, especially the territory of present-day Ukraine and Russia.

### References

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2. SCHULTZ, M. – POSDNJAKOV, . , et al. Oldest known case of metastasizing prostate carcinoma diagnosed in the skeleton of a 2,700-year-old Scythian king from Arzhan (Siberia, Russia). *Int J Cancer* [online]. 2007, vol. 121, no. 12, p. 2591-5, Available from <<https://onlinelibrary.wiley.com/doi/pdf/10.1002/ijc.23073?cookieSet=1>>. ISSN 1097-0215.
3. – ISAACS, J.T.. A history of prostate cancer treatment. *Nat Rev Cancer* [online]. 2002, vol. 2, no. 5, p. 389-96, Available from <<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4124639/?tool=pubmed>>. ISSN 1474-175X.