

Cancer of prostate is the most frequent male malignity and also it is the second most common cause of death in Europe and in the USA. There are 2 228 new cases reported in the Czech republic per year. The probability of occurrence of this disease is one to six during whole life. There is a good success in detection of his disease in the early stage due to development of screening methods. In such case the radical prostatectomy is very successful method of treatment.

Besides of operation methods like open radical prostatectomy and laparoscopic prostatectomy there is a new operation method using robotic system da Vinci. The aim of this machine is to bring the advantages of the miniinvasive surgery together with keeping intuitive handling like in open surgery.

First da Vinci system was bought and installed in the Central military hospital in Prague, Czech republic in 2005. The common knowledge about using this method is very low in both general public and specialists.

Nor patients, neither their doctors often know about possibility of surgery using da Vinci system.

The main objective of this thesis is to evaluate almost three years of experience of treatment localized prostate tumor using da Vinci system, and to describe its possibilities, benefits and disadvantages. Collection of 255 patients files aged between 48 and 83 years was used for treatment analysis, where 201 patients were operated using da Vinci prostatectomy, 50 patients underwent open radical surgery and only four patients were operated using laparoscopic variant.

Five evaluative criteria were set: hospitalization length, blood loss, operation duration, permanent catheter time and continence. It has been assumed that new surgery method has better results.

Extreme values like values from "learning curve" or from patients where surgery conversion took place were also taken into account in da Vinci data. The results clearly show, that da Vinci prostatectomy has better results in spite of these extreme values. It is obvious, that this surgery method is adequate alternative to radical prostatectomy, and it also brings a lot of new benefits.