Radical prostatectomy is an effective tool for the management of localized prostate carcinoma with a low mortality rate. With the improvement of long-term survival after surgery, quality of life has been an important issue for these patients. Erectile dysfunction following radical prostatectomy is a common problem with a frequency of 40-50%. It was suggested that the cause of erectile dysfunction after surgery was mainly due to the neurological disorder, but vasculogenic origin might participate in part in post-operative impotence. In 1983, nerve-sparing radical retropubic prostatectomy was first introduced to avoid injury to the pelvic plexus innervation. How ever, by using this technique, the impotence rate still varied from 15 to 50%.

Multivariate analysis showed that the preoperative potency status was the most important factor that significantly affected the recovery of erectile function, and age at surgery was a significant factor for the frequency of post-operative sexual intercourse. In addition, the surgeon’s experience is crucial importance for the surgical success. The cavernous nerves are often difficult to identify and may have varied course. Thus, it is nec essary to ensure the preservation of the cavernous nerves during nerve-sparing radical prostatectomy.

Recently, intra-operative cavernous nerve stimulation with mon i oring of penile tumescence has been introduced for mapping of the cavernous nerve. Although the tumescence response to nerve stimulation may be subtle, CaverMap as sisted radical prostatectomy has led to a significant benefit in the recovery of erectile function at one year after surgery. In addition, it has been shown that a response to stimulation immediately after removal of the prostate accurately predicted return of erectile function. On the other hand, patients must be informed guarding the risks of nerve-sparing surgery. To ensure adequate control, the cavernous nerves should be scarified, if any doubt remains regarding regional tumor during the operation. Further, the preservation of neuro-vascular bundle does not always promise post-operative recovery of erectile function.

It was suggested that the natural recovery of erectile function takes as long as 2 years. During this period, the treatment must be adjusted according to the frequency of post-operative sexual intercourse. In particular, the surgeon’s experience is crucial importance for the surgical success. The cavernous nerves are often difficult to identify and may have varied course. Thus, it is necessary to ensure the preservation of the cavernous nerves during nerve-sparing radical prostatectomy.

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