

**Singapore Office**

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**Clinical Practice**

**Day-Surgery Transurethral Resection of the Prostate (TURP) for Benign Prostate Hyperplasia (BPH) using PlasmaKinetic Bipolar technology**

Benign prostate hyperplasia (BPH) is a common urological condition among the elderly male. The incidence increases as Singapore's population ages. Transurethral resection of prostate gland (TURP) remains the gold standard in surgical treatment of BPH.

In NUH, we started doing this procedure as a day surgery case using new PlasmaKinetic Bipolar resection technique.

This technique has some advantages over the conventional TURP in that it can be done as a day surgery procedure; it offers patient faster recovery and monetary savings. For the institution, it helps to free up the beds for acute admissions.

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**What is Benign Prostatic Hyperplasia (BPH)?**

BPH is a non-cancerous enlargement of the prostate gland.

It is one of the most common urological problems in elderly male, with 60% incidence for those above 60 years old. The symptoms includes:

- Difficulty in starting urination (hesitancy)
- A weak urinary stream
- Interruption of the stream ('stopping' and 'starting' effect)
- Sensation of incomplete bladder emptying
- Urgency (the person has difficulty postponing urination)
- Frequent urination
- Waking up frequently at night to urinate (nocturia)

**How is BPH diagnosed?**

It is diagnosed through medical history taking, physical examination and digital rectal examination.

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**How is BPH treated?**

BPH can be treated medically or surgically.

Surgery remains the most effective method of treatment when BPH symptoms become bothersome and blockage to the bladder is significantly severe. The current gold standard for the surgical treatment of BPH is transurethral resection of prostate (TURP), which uses a monopolar, loop electrode to carve out the obstructing tissue. It is an in-patient procedure with an average length of stay of 3.5 days.

Medications are for patients with less bothersome symptoms and blockage of the bladder.

**How is it possible for TURP to be done as a day case?**

TURP can be done as a day surgery case because of the recent introduction of a new PlasmaKinetic Bipolar technology.

Using two very closely placed metal electrodes (platinum/iridium alloy and stainless steel respectively) separated by a ceramic insulator and mounted on the end of the PlasmaKinetic bipolar device, specially engineered contact ratios of the electrodes and software are used to manage electric arcs and vapour pockets that vapourises prostatic tissue in contact with it. The procedure creates an immediate TURP-like cavity, providing similar results as with traditional TURP.

Currently, NUH is the only center in South East Asia to perform TURP as a day surgery. Worldwide, 1000 over patients in 40 centers have experienced the benefits of the PlasmaKinetic Bipolar resection technique.

**What are the advantages of this technique?**

- Better bleeding control due to better haemostasis ("seal-as-you-go" effect), which in turn provide improved vision and safety during surgery
- It can accommodate longer resection time, thereby allowing handling of larger prostate gland with significantly lower/no risk of TURP syndrome since normal saline is used for irrigation

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- The localized energy pathway (bipolar electrode) reduces thermal damage and preserves tissue architecture

**What are the possible side effects?**

The side effects are similar to traditional TURP using monopolar electrocautery system. However, the risks are significantly minimized because of better haemostasis, localized energy pathway and use of normal saline irrigants.

**What is the strategic value of introducing day surgery TURP Program in NUH?**

To Patient

- Reduce cost (20-30% monetary saving compare with conventional TURP)
- Reduce morbidity
- No need for hospitalization

To Institution

- Free up beds for acute admissions
- First center in the region to offer day surgery TURP

To Nation

- Reduce healthcare cost without compromising quality care and service to our patients
- Further reinforce Singapore's position as a leading center for advanced medical practice demonstrating progress and innovation