

TRANSURETHRAL RESECTION OF PROSTATE (TURP)

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TRANSURETHRAL RESECTION OF PROSTATE

(TURP)

Benign prostatic hyperplasia (BPH) occurs in over 40% of men aged over 60 years. Resection of the prostate is reserved as second-line treatment for BPH for symptoms resistant to medical management.

The majority of prostatectomies are performed endoscopically using the transurethral route, with open procedures reserved for cancers and exceptionally large prostates. To perform the operation, the patient is placed in the lithotomy position and a modified cystoscope (a resectoscope) is used to shave away the prostate at the bladder neck. As the body of the prostate is removed, veins are exposed, but the capsule is maintained. The exposed veins can bleed, causing significant blood loss; they can also absorb large amounts of irrigation fluid resulting in TURP syndrome.

Resectoscopes traditionally use mono-polar electrocautery. This requires a nonionic solution to be used as irrigation to prevent current dissipation: 1.5% glycine solution is used. This solution, in the presence of open veins, is responsible for TURP syndrome. Bipolar electrocautery and lasers are replacing the mono-polar technique. They result in better hemostasis and reduce the absorption of irrigation fluid.

PREOPERATIVE ASSESSMENT

- Patients have a high incidence of cardiopulmonary problems. The ability of the patient to manage an increased circulating volume as a result of absorbing irrigation fluid should be considered.
- In patients with cardiovascular comorbidities, anticoagulant therapy is common and the risk for bleeding is increased. The anticoagulation medications may preclude neuraxial anesthesia.
- The operation may be performed as a repeat procedure; changes in health during the intervening time should be assessed.

- Patients may present with hematuria or may have longstanding obstruction. U&E and FBC should be checked preoperatively.
- Prostatic bleeding can be difficult to control through the cystoscope. Cross-matched blood should be available for the patients with large glands.

PERIOPERATIVE MANAGEMENT

The procedure is performed in the lithotomy or Lloyd–Davis position. Irrigating fluid is warmed to maintain patient core temperature. All aspects of laser safety should be adhered to if a laser technique is used. This includes protective eyewear for staff and patients, blinds for windows and signs on doors. Antibiotic administration according to the hospital policy (usually gentamicin or a cephalosporin)

ANAESTHETIC TECHNIQUE

Spinal anesthesia is commonly used, although a number of patients prefer to be asleep. There are several considerations when performing a spinal technique:

- Patients often have chest disease and may benefit from not having a general anesthetic.
- In awake patients, the evaluation of mental status is the best monitor of the onset of the TURP syndrome and of bladder perforation.
- Spinal anesthesia reduces central venous pressure, potentially resulting in greater absorption of irrigating fluid than with general anesthesia.
- Degenerative changes in the spine of elderly patients may make neuraxial anesthesia technically difficult. Vertebral metastasis in patients with carcinoma represents a contraindication to regional anesthesia. If a general anesthesia is used, a spontaneously breathing technique using a laryngeal mask is usually appropriate. Vigilance for development of the TURP syndrome is required.

MONITORING

- Routine monitoring in both general and spinal anesthesia
- Mental status if the patient is awake
- Arterial line in these with precarious cardiovascular function

POSTOPERATIVE MANAGEMENT

TURP syndrome can develop intraoperatively or up to 24 hours postoperatively. Postoperative full blood count and renal function test are useful to screen for anemia (which may be due to hemodilution or excessive bleeding) and hyponatremia. The initial postoperative period is not overly painful with the catheter being the major irritant; regular simple analgesia will suffice

OUTCOME

The reported hospital mortality is 0.2%–6% and may be as low as 0.5%–1% in specialist centers. There is evidence of increased intermediate and long-term mortality and morbidity with TURP compared with open prostatectomy, and with other minimally invasive surgery in this age group. Increased morbidity may be found after resections exceeding 90 min, gland size greater than 45 g and age older than 80 years.