

Orthotopic Bladder Substitution

原位膀胱替代手術

Introduction

Orthotopic bladder substitution is the treatment to create a urinary reservoir connecting to the native urinary sphincter after cystectomy.

It aims to provide urine storage after bladder removal and to maintain continence by the patient's urinary sphincter. Usually a segment of the bowel like the small bowel or large bowel would be used for reconstruction. Specialized care is necessary after orthotopic bladder substitution and strict compliance is essential to prevent complications.

Treatment outcome:

1. Treatment outcome of the bladder cancer depends on the disease status. There will be chance of tumour recurrence and progression
2. Despite the pre-operative planning of orthotopic bladder substitution, there is chance of sacrificing urinary sphincter with conversion to urinary stoma due to patient's intra-operative condition or disease status to ensure patient's safety or cancer control.

Patient selection for orthotopic bladder substitution

- Urinary sphincter and urethra could be preserved after bladder removal
- Adequate pre-operative renal function
- No significant pre-operative bowel or liver disease
- Good urinary continence before the operation
- Adequate intellectual capacity, hand-eye coordination, dexterity and mobility to follow and be compliant to the special care of orthotopic bladder substitution

Risks & complications (~25-35%)

Peri-operative

1. Anaesthetic complications and complication caused by pre-existing diseases
2. Systemic life threatening complication including myocardial infarction, cerebral vascular accident, deep vein thrombosis and pulmonary embolism
3. Bowel obstruction, anastomotic bowel or urinary leakage with or without intra-abdominal abscess and sepsis, requiring further surgical intervention
4. Urinary tract infection, chest infection, wound infection causing life-threatening septicemia
5. Ileus of the bowel causing prolonged period of oral feeding restriction and parenteral nutritional support

Post-operative

1. Anastomotic stricture, ureteric or urethral stricture and fistula formation
2. Bowel obstruction or change of bowel habit
3. Renal impairment and electrolyte imbalance
4. Urinary incontinence especially in the night time and stress urinary incontinence
5. Rupture of the “new” bladder
6. Urinary stone formation and urinary tract infection
7. Incisional or inguinal hernia requiring surgical intervention
8. Further intervention including operation for management of complications
9. Mortality (~5%) related to tumour surgery, complications or pre-existing diseases

This list is not exhaustive and rare complications are not listed.

Pre-operative preparation

1. Patient will have a general physical examination and an evaluation of blood, renal function, ECG and chest x-ray; medical consultation will be arranged if necessary.
2. Patients may be given medication one to two days before the operation to clean their bowel to facilitate the operation.
3. Intermittent self catheterization and bladder washout technique would be educated by doctors or nurses to facilitate urinary drainage and prevent mucus retention.
4. Pelvic floor muscle exercises would be educated by doctors or nurses to enhance urinary continence control and rehabilitation.
5. Stoma siting would be done before the operation in case urinary stoma is decided necessary intra-operatively
6. Patient should follow the pre-operative recommendations by doctors or nurses for their last meal and drink before the operation.
7. Patient may be given intravenous infusion or medicine before being brought to the operating room.

Post-operation care

Early post-operative period

1. You may have a thin, plastic tube in your nose +/- your abdomen for drainage purpose for a few days.
2. Pain would be controlled with medicine.
3. Monitoring, antibiotics cover, intravenous fluid replacement; blood transfusion and parenteral nutrition may be required.
4. You may be kept nil by mouth in early post-operative period. Your diet will be gradually resumed as your condition improves and as you tolerate it.
5. The urinary catheters would be irrigated and aspirated for any mucus and blood clot to prevent catheter blockage and the “new” bladder rupture.
6. An imaging study may be done before removal of the urinary catheters to ensure the “new” bladder is watertight and healing well.

Late post-operative period

1. The technique of voiding would be taught by doctors or nurses, including relaxation of the pelvic floor muscles followed by only slight abdominal straining. Regular voiding is essential to avoid the “new” bladder rupture and excessive urine absorption to the body.
2. Incontinence would be expected in the early period after operation. It usually occurs just before the next void and at night. Regular intake habit, use of time volume chart and regular pelvic floor muscle exercises facilitate the continence control.
3. Intermittent catheterization may be necessary if adequate bladder emptying could not be achieved by spontaneous self voiding only.
4. Regular blood taking is necessary to monitor if any electrolyte disturbance.
5. Regular bladder washout prevents stone formation and urinary tract infection.

After discharge from hospital

1. Care of the “new” bladder will be followed by doctors and nurses.
2. Compliance to the specialized care is essential to prevent complications.

Follow up

You will be discharged when your doctor deems you fit to return home. Please follow the instructions for wound and urinary catheter care, and attend the follow up appointment given to you upon discharge. If serious events develop after discharge, you should seek urgent medical advice at the nearest Accident and Emergency Department.

Remarks

This is general information only and the list of complications is not exhaustive. Other unforeseen complications may occasionally occur. In special patient groups, the actual risk may be different. For further information please contact your doctor.