# Continent Cutaneous Urinary Diversion
# 可控性皮膚尿流改道手術

## Introduction

Continent cutaneous urinary diversion is the treatment to create a urinary reservoir connecting to the skin through a small stoma with anti-leakage property.

It aims to provide urine storage after bladder removal and to maintain urinary continence by a specialized stoma. The patient could catheterize the stoma for urine drainage. Usually a segment of the bowel like the small bowel or large bowel would be used for reconstruction. Specialized care is necessary after the operation 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 continent cutaneous urinary diversion, there is the chance of conversion to incontinent urinary stoma due to patient's intra-operative condition.

## Patient selection for continent cutaneous urinary diversion

- Adequate pre-operative renal function
- No significant pre-operative bowel or liver disease
- Adequate intellectual capacity, dexterity and mobility to maintain the related specialized care and be compliant

## 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 stricture and fistula formation
2. Stomal stenosis or difficulty in catheterization of the stoma requiring surgical revision
3. Urinary incontinence through the stoma (6-20%)
4. Rupture of the “new” bladder
5. Bowel obstruction or change of bowel habit
6. Renal impairment and electrolyte imbalance
7. Urinary stone formation and urinary tract infection
8. Incisional or inguinal hernia requiring surgical intervention
9. Further intervention including operation for management of complications
10. 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. Stoma siting would be done before the operation.
5. Patients should follow the pre-operative recommendations by doctors or nurses for their last meal and drink before the operation.
6. 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, blood transfusion and fluid replacement 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. Intermittent self-catheterization is strictly necessary for bladder drainage
2. Regular intake habit, use of time volume chart and regular catheterization to maintain good “new bladder” emptying
3. Over-distension of the “new bladder” should be avoided as it would create difficulty in catheterization and would cause the “new” bladder rupture
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.
3. Medical advices should be immediately seek if failure to perform catheterization.

**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.