

## **Management of undescended testes (cryptorchidism) in children**

### **兒童隱辜症治療**

#### **What is an undescended testis?**

Cryptorchidism is one of the most common congenital anomalies in boys affecting about 4% full-term newborns. It is more common in preterm babies. In male foetuses, testicles are located inside the abdomen and during 7th month of pregnancy, the testicles descend through the inguinal canals into the scrotum. Any problem affecting the normal descent of the testis leads to cryptorchidism. In more than half of these babies with cryptorchidism, spontaneous descent occurs in the initial few months after birth. If by 6 to 12 months, the testicles still remain undescended, timely treatment is offered to prevent ongoing damage to the testicles.

It is important to have proper assessment to identify the problem, to define the location and the status of the undescended testicles and to look for other associated anomalies. If the testicle is not palpable, it may be lying inside the abdominal cavity, atrophic (vanishing) or absent. Careful physical examination is the most valuable tool to assess if the undescended testicle is palpable or not. If the testis is palpable, imaging studies are not necessary. For patients with impalpable testes, some centres may perform preoperative ultrasonography or magnetic resonance imaging (MRI).

#### **Treatment**

If a testis has not descended by the age of 6 to 12 months, surgical treatment to bring the testicle down to the scrotum is indicated.

#### **Inguinal orchidopexy**

This is the standard method to treat palpable undescended testes. A small incision is made over the groin region and the inguinal canal is entered. The testis together with the vas deferens and testicular vessels are meticulously mobilised. The associated patent processus vaginalis is carefully dissected and closed. The testis is then delivered into the subdartos pouch fashioned through another small scrotal incision. The wounds are closed in layers with absorbable sutures.

#### **The use of laparoscopy**

The laparoscope is the most reliable method to differentiate the various causes of impalpable testes. If the testis is not palpable even after the patient is put under general anaesthesia, diagnostic laparoscopy will be performed. Through a small umbilical incision, a laparoscopic port is inserted and the abdomen is blown up with carbon dioxide. A laparoscope is then inserted to examine the abdominal cavity. One or two additional laparoscopic ports and laparoscopic instruments shall be inserted when necessary. If an intra-abdominal testis is identified, either one-stage or two-stage orchidopexy shall be performed. For 1-stage surgery, a subdartos pouch is

similarly made through a scrotal incision to house the testis. In those that require the two-stage orchidopexy, the testicular vessels are divided proximal to the testis to allow the development of collateral vessels. The second-stage surgery shall be performed 6 to 12 months later. For an atrophic / vanishing testis, a groin incision may be required for its removal. Wounds are then closed with absorbable sutures.

### **Orchidectomy**

Orchidectomy shall be performed in patients with an atrophic or abnormal testis or in post-pubertal patients with a unilateral intra-abdominal testis and a normally descended contralateral testis.

### **Preoperative preparation**

In children, the operation has to be done under general anaesthesia. The child should not eat or drink beforehand for the time specified by the anaesthetists and surgeons. It is important to follow these instructions strictly. Otherwise the operation may need to be postponed or even cancelled. The surgeon will explain the operation including the risks in detail and a consent form will be signed. Parents have to make sure that they fully understand the explanation before the consent form is signed. An anaesthetist will also see the child and explain the anaesthetic procedure and its potential risk in detail. If the child has any medical problems such as allergies, please inform the doctors.

### **Postoperative care**

There shall be dressings over the incision sites. Doctors or nurses will advise on wound care. The child may resume a normal diet a few hours after the operation. A painkiller such as paracetamol may be used. Normal activities are encouraged though vigorous exercises shall be avoided during the first few weeks. Many children can be discharged on the day of operation or the next day. There is no need to remove any suture. Please follow the instructions for follow up visits.

### **Complications**

Overall orchidopexy, inguinal or laparoscopic, is a safe operation with a low complication rate. Nevertheless, a number of potential complications may occur. Parents shall discuss with their surgeons about the incidence.

#### General –

1. Bleeding
2. Wound haematoma
3. Wound infection, abscess, dehiscence
4. Hypertrophic scar
5. Urinary retention

#### Specific –

1. Injury to testicular vessels resulting in testicular atrophy
2. Injury to the testis, epididymis or vas deferens
3. Failure to bring the testis down to the scrotum

4. Recurrence of cryptorchidism requiring further surgery
5. Scrotal or groin oedema
6. Reactive hydrocele
7. Injury to nerves resulting in numbness of the perineum and upper thigh
8. Intra-abdominal organ injury during laparoscopic surgery

Rare but significant (if any)

1. Injury to major vessels, small bowel, large bowel, omentum, urinary bladder
2. Torrential bleeding

### **Prognosis**

Patients with one undescended testis are expected to have a lower fertility but the same paternity rate as the normal population. Patients with bilateral undescended testes have both a lower fertility and paternity rate. Despite appropriate treatment, patients with an undescended testis have a higher chance to develop testicular malignancy. Regular follow-up after surgery is important.

### **Follow up**

Depends on clinical condition, patient can usually be discharged from hospital on the same day to a few days after operation and be followed up in out-patient clinic.

### **Remarks**

This is a general description of cryptorchidism and orchidopexy. The list of complications is not exhaustive. Other unforeseen complications may occasionally occur. In special patient groups, the actual risk may be different. Please consult your doctor for details.