

**PRIAPISM**

# DEFINITION

- Persistent painful erection of the penis not necessarily associated with sexual stimulation or desire
- The erection is usually present for more than 6 hours
- ❖ **It is urological emergency**

# EPIDEMIOLOGY

- This can occur in all age groups.
- The peak incidence is between 5-10 years and 20-50 years.
- In young age it is commonly due to sickle cell disease or neoplasm.

# CLASSIFICATION

Priapism can be classified based on the following:

## 1. CAUSES

- (a) Idiopathic
- (b) Secondary

## 2. BLOOD FLOW STATE

### (a) Low blood flow (Ischaemic)

- Happens when blood gets trapped in the erection chamber
- Ischaemia and acidosis occurs because of delayed venous drainage up to 15 minutes.
- It occurs in patients with sickle cell disease, leukaemia & malaria
- It can lead to scarring and permanent erectile dysfunction

# Classification cont'd

## **(b) High blood flow (Non-ischaemic)**

- This condition persists, and pooling of blood occurs due to a ruptured cavernosal artery and rapid venous drainage is present.
- Venous drainage could also be defective.
- It is less painful
- Associated with injury to the penis or perineum

# PATHOLOGY

- The erection seen in priapism is not of the normal pattern and shape.
- It is confined to the corpora cavernosa and may affect only one side, producing a lateral chordee.
- The corpus spongiosum remains soft.
- Without immediate surgical treatment, impotence will result.

# IDIOPATHIC PRIAPISM

□ It has the following characteristics:

1. Previous transient episodes.
2. Prolonged sexual excitement.
  - 1° idiopathic priapism is seen in previously fit men after sexual activity.
  - It is usually caused by a failure of the venular spasm that sustains the erection to relax.
  - Because of embarrassment, presentation may be late.

*causes cont.*

3. Erection of corpora alone.
4. Presence of dark thick blood without clots within the corpora.
5. Refilling of corpora with bright red blood after early aspiration.
6. Limited subsidence after aspiration.
7. Eventual non-filling after aspiration.
8. Partial or complete impotence.

# SECONDARY PRIAPISM

☐ It caused by the following:

## 1. Thromboembolism.

- a) Sickle cell disease.
- b) Leukaemias.
- c) Fat embolism.
- d) Prolonged sexual activity.

2. **Trauma** – perineal or genital – high-flow type.

3. **Iatrogenic**: intracavernosal injection.

*causes cont.*

## 4. Neurogenic.

- a) Spinal cord lesions e.g. paraplegia.
- b) Cauda equina syndrome.
- c) Autonomic neuropathy.
- d) Spinal stenosis.
- e) Anaesthesia.

5. **Neoplastic** – metastases from prostate, bladder and kidney → obstruction to the venous and lymphatic drainage of the penis.

*causes cont.*

## 6. Toxins/infections.

- a) Malaria.
- b) Rabies.
- c) Scorpion sting.

## 7. Drugs.

- a) Antidepressants.
- b) Antipsychotics.
- c) Tranquilisers.
- d) Anxiolytics.
- e) Psychotropics.
- f) Hormones.
- g) Alpha adrenergic blockers.
- h) Anticoagulants.
- i) Cocaine.
- j) Alcohol.

# MANAGEMENT

## MEDICAL.

### 1. Sedation.

- First try heavy sedation with pethidine and chlorpromazine.
- This will usually cure a patient, especially if his priapism is due to sickle-cell disease.
- If he does not respond to heavy sedation in an hour or two, give him a general anaesthetic, or intravenous pethidine and diazepam, and/or try an adrenergic drug.

*management cont.*

**2. Aspiration of collected blood from the corpora and intracavernous injection of alpha-adrenergic agonists:** results in abortion of the priapism.

a) Initial aspiration of 10-20mL of blood using a 1mm/21 G needle followed by injection of 250-500µg of phenylephrine every 5 min. until detumescence occurs.

*management cont.*

- b) Alternatively, epinephrine 10-20 $\mu$ g. (up to 50 $\mu$ g) or in the strength of 1:100,000 can be used for irrigation till detumescence occurs using 2 wide bore needles, one in each corpus cavernosum.
- c) Intracavernous injection of methylene blue (10mL of 10mg/mL) has also been used.
- It acts by antagonising endothelial derived relaxation factor, which is probably nitric oxide (NO).
  - It oxidizes haemoglobin to methylemoglobin that causes vasoconstriction of the arterioles.

■ **Adrenergic drugs:**

- a) Metaraminol ('Aramine') 1mg in 5mL of saline.
- b) A dilute (0.001mg/mL) solution of adrenalin.
  - Make this by diluting the contents of a 1mg ampoule to 100mL in saline.
  - Massage his penis to distribute the drug throughout both corpora.
  - The venous spaces of his corpora connect, so you only need inject one of them.
  - Repeat the procedure after 10min. If detumescence fails to occur.

*management cont.*

- **Caution!**

- a) Monitor his BP, at 5 minutes interval.
  - Both metaraminol and adrenalin raise it.
  - Deaths from ruptured aneurysms have been reported with metaraminol.
- b) Adrenaline is dangerous in a local anaesthetic solution when used subcutaneously as a ring block on the penis or finger, where it may cause gangrene, but not in the corpora cavernosa.

*management cont.*

### **3. Intermittent compression.**

- In addition, intermittent compression of the penis after detumescence using a pneumatic cuff can be done.
- The risk of ischemic necrosis exists if compression is excessive or prolonged.

*management cont.*

## **SURGICAL.**

- When the medical  $M_x$  fails or duration of priapism is longer than 48 hours, a shunting procedure is recommended.
  1. Winter shunt.
  2. El Ghorah shunt.
  3. Sacher procedure.
- Early embolization/ligation of the involved artery for high-flow priapism