

# Methods of Castration

## Closed Method

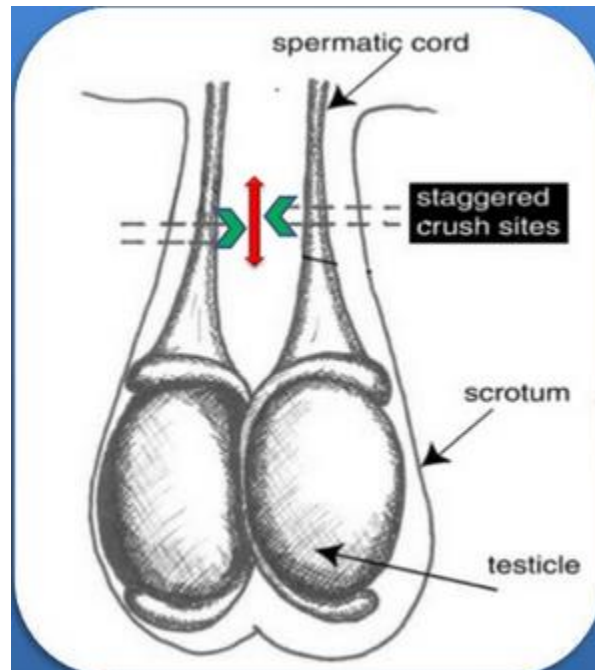
- **Anaesthesia:**
  - Not required
- **Animal Position**
  - Lateral or Dorsal recumbence with the head and limbs restrained properly
  - Standing position

### Burdizzo Castrator



- The spermatic cords with the blood vessels leading to the testicles are crushed
- One spermatic cord clipped at a time
- Clip the two cords at different levels
  - Scrotal sac will receive enough blood
  - Otherwise it will become gangrenous
- Thrombus formation in the spermatic vessels

- Arrest of blood supply – Gradual atrophy of the testicles



Steps below :-





**Crushing of the Spermatic cords using  
Burdizzo clamb**





ADVANTAGES	DISADVANTAGES
<ul style="list-style-type: none"> <li>➤ Bloodless.</li> <li>➤ Less chance of infection -no open wounds.</li> <li>➤ No risk of maggot infestation if done during the fly season.</li> <li>➤ More painless than cutting.</li> <li>➤ Quick and easy.</li> </ul>	<ul style="list-style-type: none"> <li>➤ Chance of injury to the animal or operator.</li> <li>➤ Mistakes while clamping:               <ul style="list-style-type: none"> <li>▪ Slip of the cord from the crush</li> <li>▪ Lack of blood supply to the scrotum – gangrene – infection.</li> <li>▪ Cord may be incompletely crushed .</li> </ul> </li> </ul>

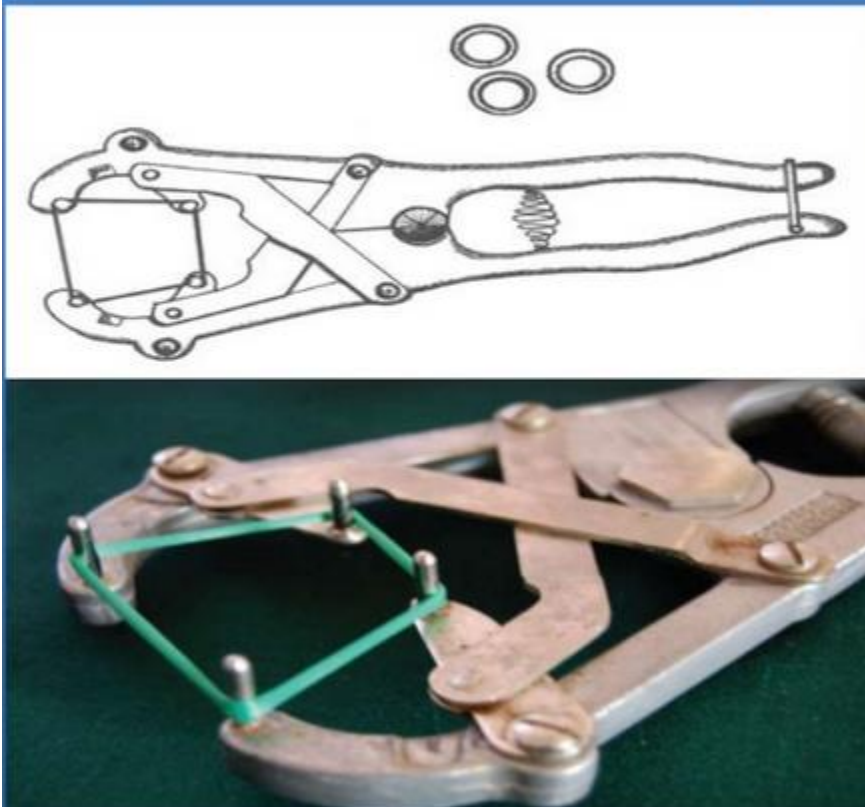
### ✚ Elastic Ring Banding

- The rubber ring is placed around the scrotum with the testicles below it
- Scrotum falls off with few weeks
- **Elastrator**
  - Young Animals
  - Before 10days of age
- **Calicrate Bander** – adult animals





**Elastrator with Rubber band**



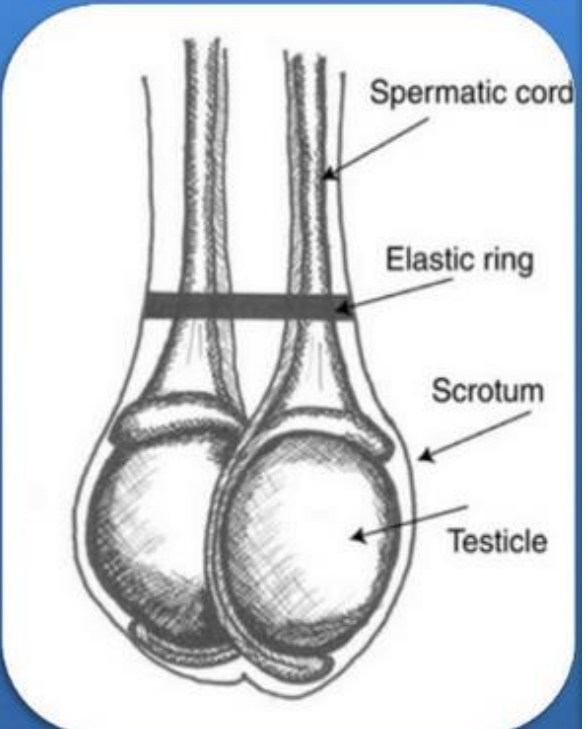
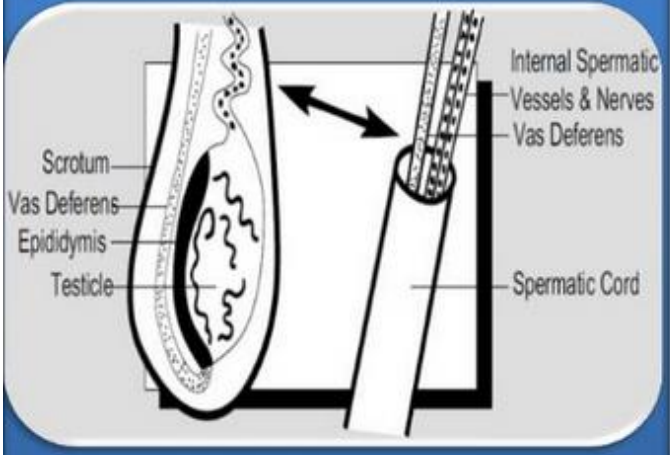
### Californian Bander

### Callicrate Bander



### Correct Position of the Elastic Rubber Ring

### Anatomy of the Spermatic cord





*Both testes should be palpated in the scrotum before Rubber ring is placed*



**The whole of both testes should be palpable below the Rubber ring**



ADVANTAGES	DISADVANTAGES
<ul style="list-style-type: none"> <li>➤ Bloodless.</li> <li>➤ Painless than cutting.</li> <li>➤ Quick and easy.</li> <li>➤ Less chance of infection.</li> <li>➤ No risk of maggot infestation - Fly season.</li> <li>➤ Scrotum fall off on their own .</li> </ul>	<ul style="list-style-type: none"> <li>➤ Rubber ring may brittle before scrotal atrophy.</li> <li>➤ Age limitations.</li> <li>➤ Wound infection - Tetanus.</li> <li>➤ Missed testicles</li> <li>➤ Pain, Discomfort – reduced growth rate.</li> </ul>

### ✚ Short Scrotum Method

- Cryptorchid procedure
  - The rubber ring is placed around the scrotum with the testicles above it
    - Testicles are pushed up against the body wall
  - Testicles at body temperature – Infertile but still getting the growth benefit of male hormones
  - The scrotum drops off after a few weeks
  - If the testicles aren't held high enough against the body, the animal may be fertile

ADVANTAGES	DISADVANTAGES
<ul style="list-style-type: none"> <li>➤ <b>Better growth and FCR than steers</b> – Testosterone in circulation.</li> <li>➤ Bloodless.</li> <li>➤ Less chance of infection.</li> <li>➤ No risk of maggot infestation - Fly season.</li> <li>➤ More painless than cutting.</li> </ul>	<ul style="list-style-type: none"> <li>➤ <b>Aggressive behavior not changed.</b></li> <li>➤ <b>Risk of live sperm production,</b> if testicles not placed high near the body.</li> <li>➤ Rubber ring brittle.</li> <li>➤ Mistakes while applying</li> </ul>



# CHEMICAL OR IMMUNOCASTRATION

- Immunization against sex hormones such as LHRH, LH, FSH, and hCG
  - Reversible and subsequent fertility normal
- Antibodies against LHRH
  - First intracellular messenger of the control of fertility
  - Block pituitary secretion of LH and FSH – lead to gonadal dysfunction
  - Lamb, Heifer – reduction of fertility
  - **Vaxstrate** – Australia – Suppresses ovarian cyclicity for 6 to 8 months
- Immunization against testosterone in rams
  - Not characterized by inhibition of sexual behaviour
  - No suppression of testicular function
- **Chem-Cast, Improvac** –pig
- Immunization against ova and sperm
  - Anti-male or anti-female **monoclonal antibodies**
  - Block gamete interactions – **sperm antigens, ZP3 antigen**

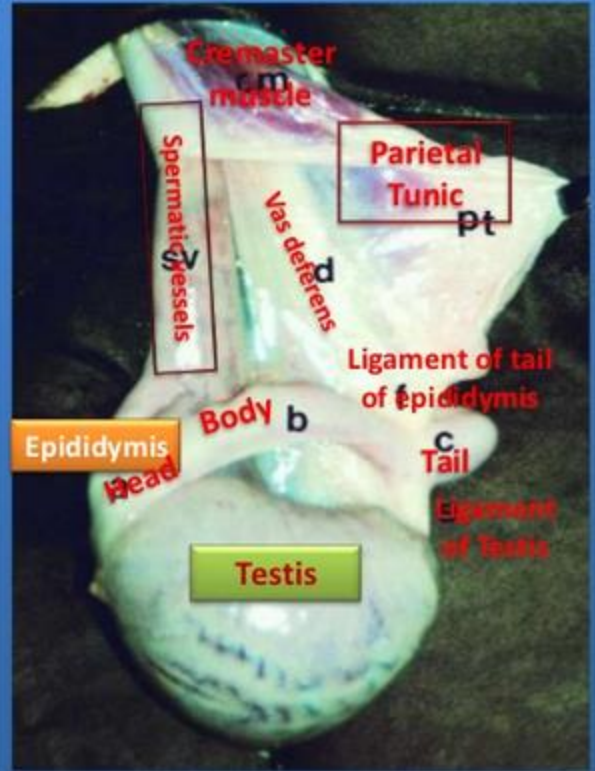
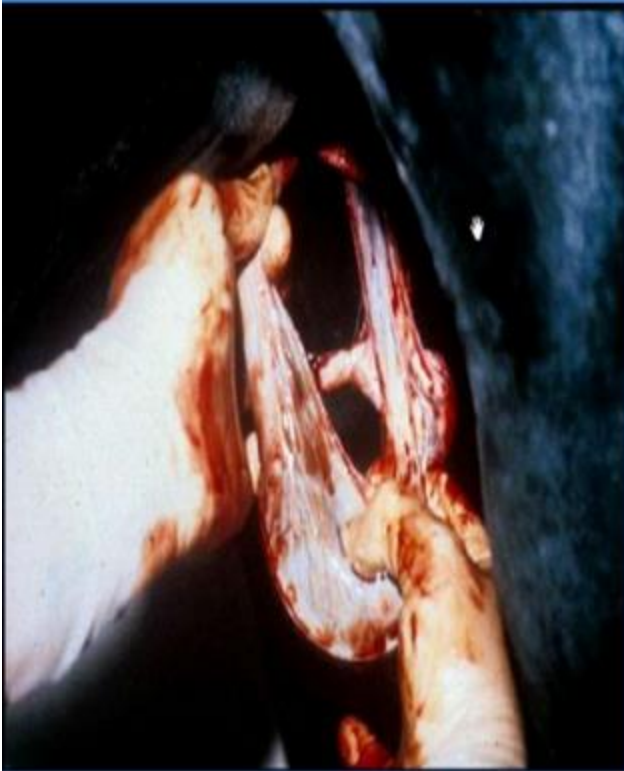
ADVANTAGES	DISADVANTAGES
<ul style="list-style-type: none"><li>➤ Painless procedure</li><li>➤ <b>Reduction in aggressive behavior – no Testosterone</b></li><li>➤ No risk of blood loss, infection</li><li>➤ May be reversible</li></ul>	<ul style="list-style-type: none"><li>➤ Not as effective as cutting or banding</li><li>➤ Not a permanent method</li><li>➤ Need to vaccinate at regular intervals</li><li>➤ <b>Limited duration of effect</b></li><li>➤ Risk of vaccine failure</li><li>➤ Chance for drug adverse effects</li></ul>

# OPEN CASTRATION METHOD

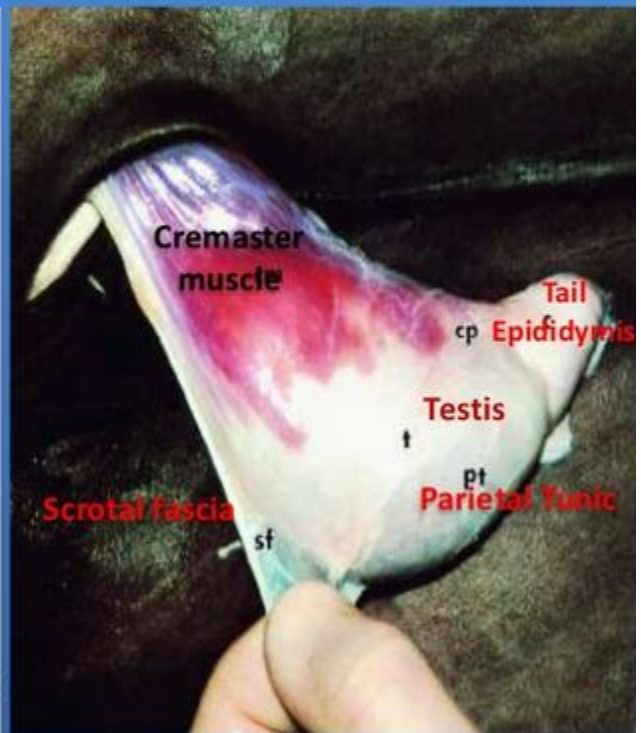
- **Anaesthesia:**
    - Age – young – not required
    - Local Infiltration
      - Site of incision
      - Testicles, Spermatic Cord
    - General Anaesthesia
  - **Animal Position**
    - Lateral or dorsal recumbence
    - Standing position
  
  - **Open Uncovered** or **“Open Open”** method
    - Vaginal tunic incised
    - Correction of the scrotal hernia – Horses
  - **Open Covered** or **“Open Closed”** method
    - Vaginal tunic sutured
- 
- Emasculator
  - Newberry castrating knife
  - Castrating knife
  - Henderson castrating tool

ADVANTAGES	DISADVANTAGES
<ul style="list-style-type: none"><li>➤ Permanent method</li><li>➤ No chance for sperm production</li><li>➤ Reduction in aggressive behavior – no Testosterone</li><li>➤ For both young and adult</li></ul>	<ul style="list-style-type: none"><li>➤ Blood loss and other <b>post op complications</b></li><li>➤ More chance of infection</li><li>➤ High risk of <b>maggot infestation</b> if done during the fly season</li><li>➤ Not reversible</li><li>➤ Require more skill</li></ul>

vaginal tunic - opened



vaginal tunic - intact





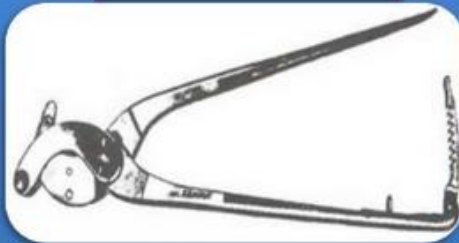
## Reimer Emasculator

2 Crushing/1 Cutting surface



## Different Types of Emasculator

Serra emasculator



White emasculator



Hausmann emasculator



White modified



**Single action (crushing)  
Emasculatome**



**Placement of Dual-action Emasculatome  
on spermatic cord.**



**Dual-action Emasculatome  
Cutting surface**



**Dual-action Emasculatome  
Crushing surface**



**Henderson castrating tool**



**Newberry Castrating Knife**

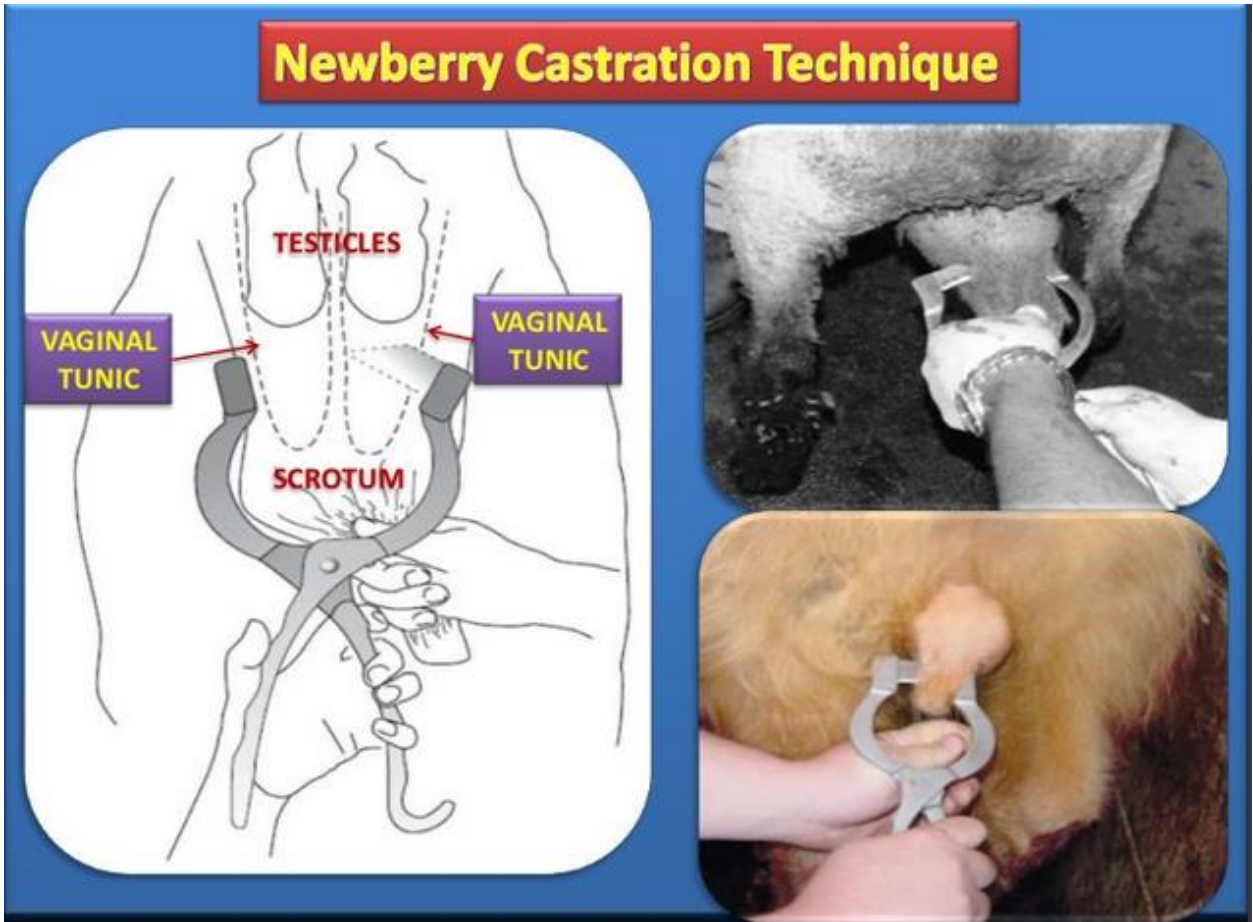


**Castrating Knife**

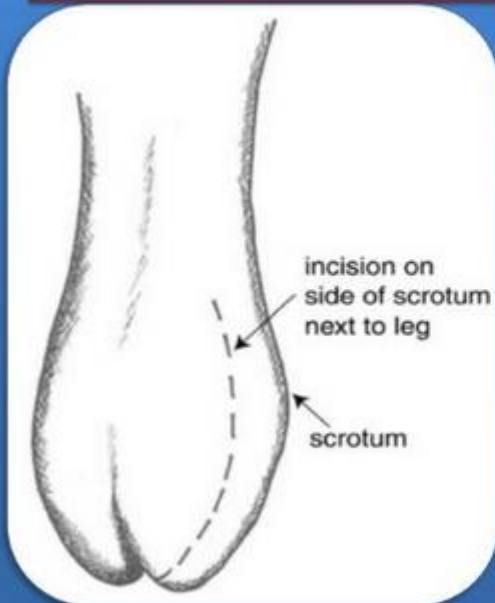




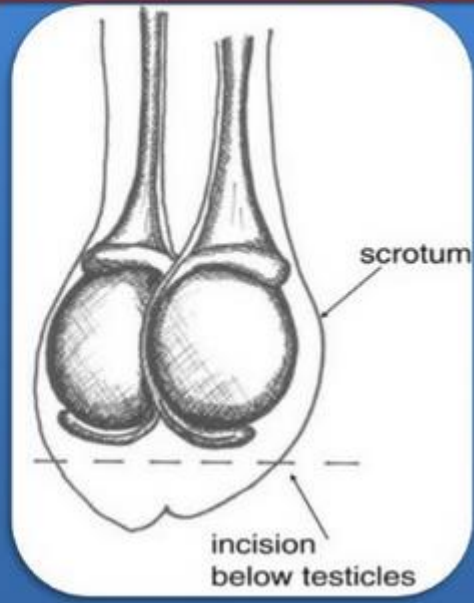
**Newberry Castration Technique**



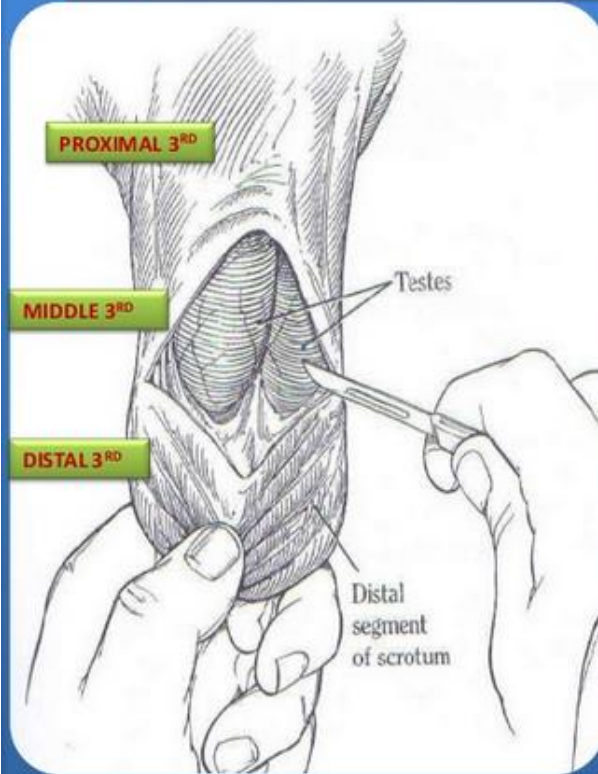
**Vertical Incision method**



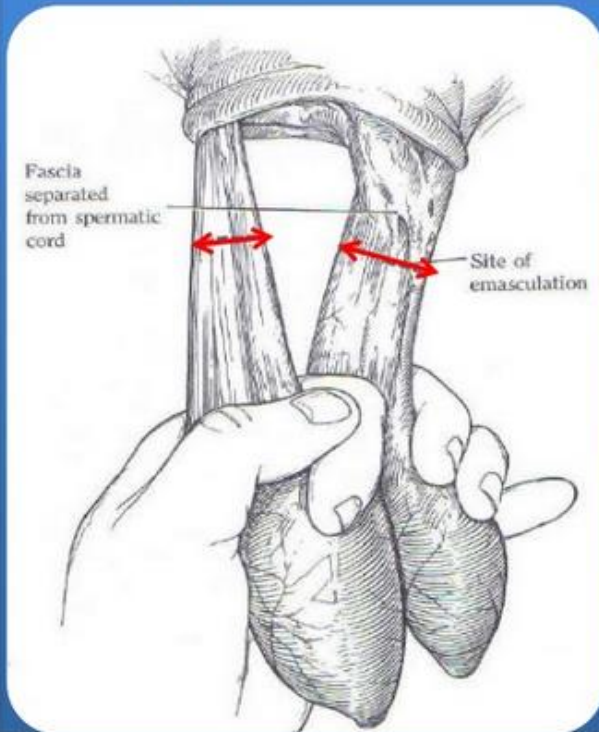
**Horizontal Incision method**



**Single horizontal incision at the widest part of the scrotum**



**Spermatic cords are separated by blunt dissection**



**Spermatic cords are being emasculated**

