Proceedings of the 9th International Congress of World Equine Veterinary Association

Jan. 22 - 26, 2006 - Marrakech, Morocco

Reprinted in IVIS with the permission of the Conference Organizers http://www.ivis.org/
SURGERY OF THE MALE GENITAL TRACT

Tim Greet
Rossdales Equine Hospital, Newmarket, UK

Castrating colts
Standing “open” technique under sedation and local analgesia
“Open” or “semi-closed” techniques under general anaesthesia
Cryptorchid castration (inguinal approach; laparotomy; laparoscopy)

Standing technique 1
Two descended testicles
Good person on head and twitch
Sedation suitable for patient’s temperament
Inject local anaesthetic into body of testicle and subcutaneously
Wait! (multiple castrations as quick as single case)

Standing technique 2
Bold incision through skin into testicle
Emasculate testicular ligament (good instrument!!)
Emasculate cord above plexus level
“Surgeon’s minute”?
Ligature?
Ensure adequate drainage

Medical therapy
Tetanus status?
Penicillin
Phenylbutazone or other NSAID
Clean and grease
Cold hose
Exercise

Complications
Evisceration! (preoperative diagnosis ??? intestine or omentum)
Haemorrhage (never fatal?? platelets?)
Swelling/ oedema ..... improve drainage
Infection (schirrous cord)

How to manage evisceration?
Breed prevalence (be prepared)
Pre-op check (may show little)
Time of occurrence? (may be days!)
First aid (sheet)
GA repair

What to do with omental prolapse?
Resect standing
Replace or resect and close tunic under GA
After standing castration probably better to resect and leave tunic open
Closure may be better after GA castration (hygiene)
**Post castration haemorrhage**
In standing surgery may be testicular vessels
Pursuing the vessels requires GA (not a good idea?)
Packing?
Horses never bleed to death?
Platelet deficiency in chronic bleed (transfusion?)

**Swelling and infection**
Drainage? (improve?)
Antibiotics and nsaids
Exercise
If schirrous cord resect under GA (ultrasound; rectal?)

**Castration under general anaesthesia**
Open technique (only if very poor facilities)
Closed technique
(blind ligation of vasculature by transfixation through tunic after cremaster removal)
Semi-closed …..open tunic and direct ligation of cord; close tunic;
…… (choice??)
close subcut and skin in good conditions
leave open if less good conditions

**German technique**
GA and semi open or closed techniques using an inguinal or pre-scrotal approach
All the advantages of scrotal approach
Reduced risk of postoperative swelling
Experiences with inguinal approach to cryptorchid castration

**Problems specific to castration under GA**
Massive haematoma and swelling
Spinal cord infarction (cobs)
What to do if massive postoperative swelling?
Usually scrotal rather than other vessels involved
Exercise, cold hose and nsaid medication
Re-open incision (may not be in most dependent position!)
“Slash” into swelling and remove clots (exercise….. on lunge?)
Treat as “open” castration

**Cryptorchid castration 1**
Testicle in canal (right?) or abdomen (left?)
External palpation, rectal assessment or ultrasound
HCG stimulation if nothing visible (history unknown)
Laparoscopic assessment
Remember minuscule testicles and monorchids are encountered

**Cryptorchid castration 2**
Minimally invasive inguinal approach
(identify gubernacular remnant or vaginal process and “patient” traction)
Radical inguinal approach (closure!!!)
Caudal/ parapenile laparotomy
(no idea of location or side involved, or bilateral cryptorchid)
Laparoscopic approach
Minimally invasive inguinal approach
Reliable with experience
Patience is a virtue!
Easy closure
Early return to exercise

Radical inguinal approach
Reliable
Nightmare closure!
Risk of haemorrhage or evisceration
Delayed return to exercise
You never know what you might find!

Laparoscopic cryptorchidectomy
Under GA..Trendelenberg position …anaesthesia!
Standing technique
(more difficult gonad identification than for ovarietomy …starvation
….difficult if in canal)
Intra or extra- abdominal haemostasis
Other testicle?
Return to exercise

Costs vs benefits of laparoscopic cryptorchidectomy
Equipment cost
Technical expertise (care with viscera)
Starvation
Delayed return to exercise cf minimal inguinal
Removal of other testicle (Utrecht experience)
Definitive testicular location
No GA
Earlier return to exercise cf radical inguinal or laparotomy

Inguinal / scrotal hernia
Non-strangulating (common in foals)
Strangulating
(at any age but particularly in stallions after breeding or exercise)

What to do if a non-strangulating hernia?
Pre-op assessment (clinical and ultrasound)
Use minimally inguinal approach and attempt to close external ring if very large
Laparoscopy under GA (T. Marien)
Commonly resolves spontaneously in many young TBs

What to do with a horse with a strangulating inguinal/ scrotal hernia?
Abdominal pain (may be unremitting)
EMERGENCY
Needs both inguinal approach and laparotomy

What to do with a schirrous cord?
Radical removal of tunic containing granulomatous or infected area
via an inguinal approach under GA
Leave adequate drainage
Antibiotic cover (tetanus status?; nsaid)
Exercise (unless radical inguinal approach necessary)

**Other surgery of male genitals**
Testicular neoplasia
Testicular torsion
Penile amputation
Bolz’ phallopexy

**Testicular neoplasia**
Uncommon
Seminoma
Sertoli Cell
Terratoma

**Terratoma**
Least uncommon
Usually cryptorchid
Fluid filled
Hair, teeth or other tissues?
Embryological error

**Testicular torsion**
Scrotal pain
Scrotal swelling
Colic?
Swelling becomes cold

**Penile amputation**
- Distal-neoplasia
- paralysis
- priapism?

**Penile ablation / perineal urethrostomy**
- proximal tumour
- priapism

**Distal penile amputation**
GA tourniquet
Catheterise urethra and dissect out
Amputate
Close CCP
Spatulate urethra
Don’t amputate proximal to preputial ring

**Bolz’s phallopexy**
Chronic penile prolapse

**Accessory sex glands**
Mass on colliculus seminalis on a 9 yo TB stallion
with haemorrhage at the end of urination