Management of Common diseases of donkeys in Kenya

Kenya Veterinary Association
Self Employed Veterinarian Branch
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Presentation layout

• Introduction
• Donkey handling and restraint
• Common diseases affecting donkeys and their management
• Equine health planning with reference to the donkey
• Challenges and way forward
INTRODUCTION
Donkey population and contribution to communities

• 1.8 Million in Kenya
• Contribution
  – Biodiversity
  – Grassland management
  – Draught animal
    • Firewood
    • Water
    • Agriculture
    • Building and construction
    • Manure
  – Food animal- Milk, Meat, bones, skin
  – Companion animal and security
• Donkeys in disasters
DONKEY BEHAVIOUR, HANDLING AND RESTRAINT
History Taking and full Exam
Key competencies to managing diseases in donkeys

• Core competencies
  – Clinical assessment skills
  – Knowledge of core veterinary (Anatomy, pathology, Public health, Medicine, Surgery)

• Non core competencies
  – Extension and community development
  – Veterinary governance as relates to donkeys
COMMON DISEASES AFFECTING DONKEYS AND THEIR MANAGEMENT

Selected Diseases:
- Rabies
- Wounds and Injuries
- African Horse Sickness
- Colic
- Laminitis
- Ectoparasites
- Sarcoids
RABIES
• An invariably fatal disease of all mammals (including us)
• Neurotropic virus
• History? Other rabid animals, history of bite?
• Variety of presentations
• Any rapidly progressing neurological condition should raise suspicions
• Incubation period of 2 weeks – 2 months
• Dumb and furious form
• Death in 3-7 days
AFRICAN HORSE SICKNESS
• Viral
• Infectious
• Seasonal
• Vector (Midges)
• Different forms of the disease
• With different prognosis
Donkey With African Horse Sickness
Mule-mulberry
Acute AHS
Acute Form
AHS Prevention

• Vaccine
• 9 serotypes
• When to vaccinate – before the outbreak
• Do we vaccinate the donkeys?
• Wash animals with 0.5% solution kerosene in water to deter culicoides. ie 5 ml in 1 litre water
• Do we wash down (with kerosene) animals already sick? Incubation 4-8 d
AHS Treatment

- No treatment....
  - ....But, supportive therapy.
  - Rest
  - Fluids
  - Anti-inflammatory
  - Antibiotics
  - Eye ointments
- Feed, etc
- Spray to prevent biting flies

- Good hygiene
- Anticipate outbreaks
- Early recognition of signs and effective treatment
- Isolate suspect animals
- Avoid carrying the disease yourselves. (clean equipment, hands etc)
- Wear gloves if available
- Don’t share needles,
How Do We Reduce the Spread of Infection?

• Dispose of carcasses logically
• Think about the disposal of infected discharges/pus etc.
• Think about the disposal of infected diarrhoea
• Think about the disposal of aborted foetuses
• Control vermin-flies
  – Owner to remove faeces
• Swabs needles dressings etc
BABESIOSIS
Cause

- Tick vector
- *B. equi* (the small one, being reclassified)
- *B. caballi*
- Acute and chronic syndromes
Signs

Acute
- Intermittent fever with sweating
- Anaemia, pallor, jaundice
- Petechial or echymotic haemorrhage on conjunctiva
- Tachycardia,
- Possible haemoglobinuria, colic, reluctant to move

Chronic
- Chronic debility, weight loss, anaemia, emaciation, haemic murmur
- May be difficult to detect parasites in blood.
Treatment

• Imidocarb. 1-4 mg/kg im, repeat after 1 or 2 days if signs persist. Use lower dose in donkeys
• Beronil- but more toxic in the equine
• Supportive therapy.
• Premunity?
NAGANA (African trypanosomiasis)

- Transmitted by Tsetse flies
- Fever: comes and goes
- Dull
- Easily tired and stop eating
- Eye discharge
- Swollen lymph nodes
- Pale MM
- Oedema
- Nervous signs
Treatment

Prevention
• Control flies (sprays)
• No vaccine

Clinical management
• Homidium bromide (Ethidium)
• Quinapyramine sulphate (Antrycide)
SURRA

- Transmitted by Stomoxys flies
- Same signs as Nagana
- Same Treatment
DOURINE

- Venerial disease caused by tryps
- Diagnostic techniques:
  - Swollen penis or vulva and discharge
  - Oedema at the sides of the body
  - Hind legs weakness in later stages
  - 50% death rate
  - Berenil for prevention at time of mating
  - Euthanasia is recommended
STRANGLES

• Highly contagious bacterial disease
• Can occur in epidemics
• Young animals most at risk
• Direct and indirect transmission
• Can persist in environment for months
CLINICAL SIGNS

• Febrile, appear sick, cough, serous bilateral discharge.
• After a day or two, more purulent discharge, difficulty swallowing, enlarged painful lymph nodes
• 1-2 weeks later abscesses burst and animal brightens
• Recovery or carrier or auto immune complications
THERAPY

• Strangles gram +, therefore susceptible to penicillin….but
• Abscess, no antibiotics until confident all abscesses have drainage.
• Supportive therapy
PREVENTION IS BETTER THAN CURE

• Pus and droplets (coughs and sneezes)
• Isolate and dispose of discharges etc
• Isolate
• Monitor in contact animals (incubation 4-8d)
• Beware you don’t carry infection between animals
• Wash all harness, bucket etc with disinfectant and put into sun to dry.
ANTHRAX

• Very important zoonotic disease *B. Anthracis*
• It is our responsibility as veterinary health professionals to:
  • Protect ourselves
  • Protect other animals
  • Protect the community
SOURCE/TYPE

• Spore and vegetative form
• Spore form persists in the environment indefinitely
• Vegetative -> spore in presence of oxygen
Anthrax (in Equines)

- Fever and depression
- Oedema under jaw, on neck and ventral abdomen
- Haemorrhage under mm and possibly bleeding from orifices
- Death 1-3 days later
- No rigor mortis and blood may not clot
• Lab Diagnosis

**Blood smear**

From extremity of carcass
Eg ear, coronary band
Large, gram+ bacteria, brick shaped rodes
What to Do

• Do not open the carcass!
• (Bury very deep in lime)
• Burn
• Or leave closed for 48hrs and then bury
• People if exposed seek medical advice, if not available take penicillin
• Monitor animals in close contact for fever. If increase 1C give penicillin. Vaccinate.
What not to do!
TETANUS
• Caused by a clostridial bacteria- C. tetani
• All clostridia anaerobic
• Clinical signs caused by a toxin produced by the bacteria, not directly by the bacteria themselves
• Penicillin kills the bacteria but clinical signs persist because of toxin
Clinical signs

Early stage
- Stiffness and anxious expression,
- Exaggerated response to sudden noise and movement
- Difficulty in turning head

Later Stage
- Protrusion of third eyelid, especially if head raised
- Standing ears
- Salivation and difficulty swallowing
- Rigidity and mm spasm, esp in response to noise
- Recumbent, convulsions, death
Prevention

• Tetanus vaccine (toxoid)
• Repeatedly flush deep wounds with saline or 1% iodine
• Explore and open deep wounds if possible
Treatment

• If the animal can not stand the prognosis is hopeless.
• If standing, find the wound and flush (H2O2).
• High dose of penicillin.
• TAT.
• Nursing, supportive therapy and house in a dark quiet place.
COLIC
Equine are “hind gut fermenters”, This makes them more prone to intestinal problems than bovines.
PRESENTATION

Colic = pain in the gut
- Ddx
- Uterine torsion
- Laminitis
- Obstructive urolithiasis (very rare!) remind me to talk of lasilix
- Tetanus

Gut anatomy
- Simple stomach, like us.
- Small intestine. Up to 76 feet long in large horse!
- Large intestine
- Rectum
- We will see during the PM’S
There are many causes of colic; all cause pain

• The animals do not die from the pain,

• they die from circulatory collapse secondary to sequestration of fluid in the malfunctioning gut

• And endotoxic shock secondary to movement of endotoxin across the malfunctioning gut wall
Causes of colic dh

- **Food**
  - Sudden change in diet
  - Too much food, eg too much grain from sack
  - A lot of highly fermentable green fodder suddenly.
  - Poor quality feed such as mouldy hay, too much straw.
  - Long gaps between large meals

- **Water**
  - Not enough water
  - Rapid drinking of too much water
  - Water not supplied regularly
Causes of colic

- **Parasites**
- Strongyles. Verminous colic
- Cestodes
- Some people say excessive gasterophilus
- Sand
- Geo-phagia as result of salt deficiency.
- Can cause inflammation and impaction
- Place small quantity of faeces in water. See if sand settles out.
Causes of colic

- Poor Teeth
- Mucosal ulceration
- Impaction
Eating plastic bags etc

- Equine eat all sorts of rubbish. All we can do is try to keep the gut lubricated and the animal well hydrated.
Obstructive Colic

< Donkey with hanging plastic bags on anus due to scavenging and poor care of environment– training on good feeding and environmental care

Post mortem aids in confirming some cases like colic where owners are able to see risks of poor husbandry
Other causes of colic

- Volvulus
- Pedunculated Lipoma
- Intersuception
- Nephro-splenic entrapment
- Strangulation through hernia/meckles diverticulum
- Any many more

- Fortunately these surgical conditions are responsible for less than 10% of colics.
- 90% of colics should respond to medical treatment.
Anamnesis. (you can’t rationally treat colic without this)

• When did the colic start?
• How severe have the signs been and is it getting worse?
• Has the animal had colic before?
• When did the animal last pass faeces and how much?
• What was faecal consistency?
• When was it last wormed?
• When did it last eat? What does it eat? Has it had anything different to eat recently?
• When did it last drink?
• when did it last pass urine?
• Is it pregnant?
• Has any treatment been given?
Clinical signs of colic

- Donkeys show far fewer behavioural signs to pain.
- This does not make the colic less serious, the long term prognosis is identical to the horse, it just make the vets job much harder.
- Try to perform your examination before giving any drugs as analgesics especially can hide the clinical signs.
- Sometimes in the interests of safety this is impossible.
Clinical signs of colic

- No one sign is definitive. Each sign has to be viewed in itself, and contributes to the entire clinical picture.
- E.g. if an animal has a very high pulse but has good gut sounds prognosis is better than high pulse and no gut sounds.
Pulse rate

• Very valuable as an indicator of pain, for monitoring progression of colic and for prognosis.
• Change in pulse from hour to hour good for prognosis. Eg increasing pulse rate is worrying.
• Has to “resting” pulse

• Pulse rate < 50 per minute. Probably not a serious colic.
• Pulse rate 50-60, pain but not too worrying
• Pulse rate 60-80. This is worrying especially if rising or does not come down after analgesia.
• Pulse rate >80 very worrying. Possibly terminal.
Gut sounds

• Listen in all four quadrants
• Know normal and you will know abnormal.
• Listen for 1 minute at each site.
• Remember even a static gut will produce some gas

• No sounds. Ileus ie static gut. Possible impaction
• Reduced sounds, Possible impaction
• Normal sounds
• Hyperactive sounds. Spasmodic colic
• Gassy “ping” sounds, flatulent colic
Mucus membranes and CRT

• Know normal!
  • Pale- peripheral vaso-constriction, early stage, = dehydration and shock.
  • Deep congestion (dark red) or cyanosis (purple) with CRT >3secs = sign of peripheral circulatory failure and endotoxic shock.
Rectal examination.

- Use well lubricated hand and arm.
- Short finger nails
- No rings etc
- Very gentle, much more delicate rectum than bovines
- Stop and wait if peristalsis.

- Feeling for tight bands of mesentery
- Impacted bowel
- Gas distension.
- Easy to tear rectum.
- Can’t do medium or small donkeys or ponies or foals.
- Remove faeces
- Take temp first.
Although there are many causes of colic we only really have four treatment options

- Treat for spasmodic colic
- Treat for flatulent colic
- Treat for impaction colic
- Euthanasia for terminal surgical colic.
Spasmodic colic

- Mild to moderate pain
- Hyperactive gut sounds.
- Pulse generally <60
- (mild tympany and inflammation for various reasons present the same and need same treatment.

**Treatment**
- Aims: To impose correct function on gut
- Hyosine +dipyrone both IV.
- Or flunixen meglamin.
- Repeat if necessary
- Usually respond well to Tx.
Flatulent colic

- Abdomen can be distended. (not always)
- Auscultation and percussion give “pinging” sounds.
- Distended bowel palpated per rectum
- Gut sounds reduced.
- Pulse generally < 60

- Treatment goal: to relax gut so it functions normally
- Give analgesia.
- Eg PBZ IV, or flunixin meglamine.
- Walking can help.
- Repeat if necessary
- Usually respond well
TERMINAL Flatulent colic
Impaction type Colic

- Starts as low grade colic, gets worse over a few days.
- Very quiet or no gut sounds.
- Can sometimes be felt per rectum.

- Treatment goal: to hydrate and lubricate gut so obstruction can move.
- Give liquid paraffin by naso gastric tube. 4 L in horse, less in donkey. If some gut sounds also give fluids via naso gastric (ORS)
- Otherwise IV fluids.
- Give IV analgesia eg PBZ
- Repeat if necessary
Poor prognosis. Consider euthanasia

- Pulse over 80bpm, non responsive to analgesis eg xylazine
- Mucus membranes dark purple / toxic
- Low body T ie < 36ºC
- Respiratory rate >50 breaths per minute
- Large volume gastric reflux
- Pulse quality weak
- Severe pain
- Very dehydrated
- CRT >4 secs
RECTAL PROLAPSE
RECTAL PROLAPSE

Definition

Lower/end of gut turn out/come out of body.

Cause: Heavy worm infestation, diarrhoea, malnutrition, feeding of dry feed (bran) without adequate water, overloading/overworking

Manifestation

- Mass of reddish (meat) hanging from rectum- (rectum oedematous, reddish or cyanotic (poor prognosis); may rupture due to excessive oedema.
Treatment/ Management

• Restraint important (Physical/Chemical- ACP or Xylazine)
• Gently clean rectum and perineum- minimum damage to organ etc etc
• Apply hygroscopic compound- sugar (to reduce size), wash off afterwards. NOT salt very irritating.
• Gently and carefully return to position (PATIENCE?????)
• DON’T PUSH AGAINST PERISTALYSIS
• May retain with purse string suture MAX. 12 HRS but DON’T BLOCK passage of faeces/urine.
Control/ Advice

• Treat underlying cause
• Advice- water ad lib and monitor defaecation
Endoparasites

The distribution of equine endoparasites is remarkably constant throughout the world.
This is not a list of species but....
We have 4 main families of equine endoparasites

- Nematodes
- Trematodes
- Cestodes
- Arthropods
Nematodes. Ascarids
Nematodes. Ascarids, effect on adult animals

- Can block pancreatic and bile ducts.
- Compete for nutrition
- Adults develop some resistance after 1 year. Only about 10% adult equines in endemic area have patent infections.
- Produce thousands of eggs which can persist in environment for years infecting foals.
Nematodes. Ascarids. Effect on foals

- Can block small intestine leading to colic, impaction & rupture.
- Can block pancreatic and bile ducts.
- Cause ill-thrift, lack of growth and weight loss
- Respiratory disease in foals: Coughing, grey/white nasal discharge, lots mucus in airways, pyrexia, can predispose to secondary bacterial infection.
Nematodes. Ascarids diagnosis


-Therefore deworm foals from 5 weeks
Nematodes.

*Dictyocaulus arnfieldi*
Nematodes: *Strongylus vulgaris*. The most pathogenic large strongyle
Nematodes: *Strongylus vulgaris*. The most pathogenic large strongyle

- Early stage resides in cranial mesenteric artery.
- Aneurism and thrombus formation can lead to verminous colic.
- Ubiquitous with ppp, 9 months
- Massive larval invasion of all 3 large strongyle in foals can lead to sudden severe depression, colic and death.
- Lower level infestation can give colic, pyrexia, anorexia, ill-thrift, wasting, anaemia, hypoproteinaemia in adult and foal.
Other nematodes of significance.

• Trichonema spp
• *Strongyloides westeri*
• *Cyathastome spp*
• Cause ill thrift, diarrhoea, hypoalbuminemia.

• *Oxyuris equi*
• Cause intense itching around rump and base of tail.
Leech: sublingual
Arthropods: Cutaneous habronemiasis
**Arthropods: Cutaneous habronemiasis**

- Normally larval stage resides in stomach
- Aberrant larvae can live in wounds
- Wound becomes indolent (ie wound does not heal)
- Can occur anywhere, but most common below eye.

- Tx, ivermectin mixed in oil based antibiotic ointment, a bit of steroid also helps!
Arthropods: Gasterophilous *spp*
Trematodes: *Fasciola hepatica*
Trematodes: *Fasciola hepatica*

- Of unknown pathological significance. But probably significant if one extrapolates from other species. Around a 10% prevalence in donkeys and mules in Africa.
- Unaffected by avermectin group.
- Larval stage lives in liver parenchyma
- Adults live in bile ducts
Trematodes: *Gastrodiscus egypti*
Cestodes. *Anoplocephala* spp
Seasonal infection

- Infestation mainly acquired towards end of wet season.
- Can de-worm before and after wet season.
- Before to reduce pasture contamination.
- After to give longer period of reduced infestation.
Education for owners.

• Remove faeces from area around animal.
• Don’t feed on ground, feed from sack or container.
• De-worm regularly
• De-worming not an alternative to adequate nutrition
Rational anthelmintic strategy

- Rotate between agents
- Don’t under dose
- De-worming especially important when nutrition in short supply.
ECTOPARASITES/SKIN
Ectoparasites

- Pruritis very underrated condition. Cause decreased feed intake and irritation. Skin conditions in general are difficult, they all look the same itch but are an extremely common reason for presentation to mobile clinic.
Ectoparasites / skins

- Mange
- Lice
- Bacteria
- Fungi
- Flies
- And other skin conditions for completeness.
Lice (pediculosis)

- 2 main species
  1. *Haematopinus*, yellow-brown about 5mm long, relatively easy to see. A sucking louse
  2. *Damalinia* smaller and pale. A biting louse
- They can be seen moving on the skin surface, especially on the neck and over the rump.
Lice

• Both cause pruritis, and the animal will rub and lick itself a lot.
• Both cause hair loss from mild to severe.
• Both cement whitish yellow nits (eggs) to hairs especially at the base of the mane, the neck and tail base. Similar to *Gasterophilus* eggs
Louse prevention

- Regular grooming
- Disinfection of tack shared between animals and rubbing posts etc.
Guidelines....?

- Lice on donkey
- Ticks on tail base and neck
- Bot Eggs
Mange 1

- Chorioptic mange – leg mange
- Cl sx.
- Stamping feet,
- Thickened flaky or scabby skin over heels.
Mange 2

• Psoroptic mange- on any part of body, but especially side of mane, base of tail. Inside ears (head shaking but Ddx ticks)
• Severe irritation, thickened skin, scabs, oozing, rubbing mane or tail.
Mange 3

• Sarcoptic mange. Notifiable disease in UK.
• Crusty grey brown hairless patches
• Very severe irritation resulting in biting, rubbing and self excoriation.
• Any part of body, but usually areas with short hair.
Mange: Diagnosis.

• mites burrow in the skin so are not visible.
• Skin scrape must be taken
• Skin scrape- choose affected area or margin of affected area. Moisten this area with liquid paraffin, scrape with scalpel blade until get capillary ooze. For mange repeat in >5 places.
• One mite = + result. No mites – not conclusive
• Can do KOH digest to remove debris
Ticks

- You know lots about ticks, babesiosis etc
- One tip, if an animal has ticks in ear, mix normal acaracide with vegetable oil instead of water (same volume) and squirt in ear.
- Train owners to remove ticks by hand, ensuring mouth parts also removed.
- But removal of ticks in areas where babesia endemic is controversial as issues of premunity.
Lice/Mange/Ticks treatment

• Ivermectin effective against *Haematopinus* only (as sucking louse)

• Topical insecticides. Eg organophosphate spray, permethrin (louse powder) follow manufactures instructions (op’s especially)
  – They can kill fish

• Repeat every 7-10 days 3 times to kill newly hatching eggs
MUSCULAR CONDITIONS
A. Wound Management

• Remove the cause of wound
• Clip the hair around the wound
• Clean the wound and remove dead parts of the wound- flush (H. peroxide)
• Oxygen supply important- anaerobic encourages C. tetani growth (TETANUS)
Cont....

• Allow proper drainage of wound
• Apply diluted (1-2%) Povidone Iodine

NB: In deep wounds important to give tetanus toxoid and a dose of Penicillin (TETANUS)
Hypocalcaemia-Milk fever

- Uncommon condition of lactating mares or extreme exertion or transport.
- Stiff gait, mm twitching. Sweating, ataxia, thumps (SDF) fits coma death.
- Tx calcium borogluconate 250-500 ml to effect I.v. diluted in 4x saline.
- Pop bit sc after as well.
Lower/end of gut turn out/come out of body.
Cause: Heavy worm infestation, diarrhoea, malnutrition, feeding of dry feed (bran) without adequate water, overloading/overworking

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• Advice- water ad lib and monitor defaecation
paraphimosis

URINARY TRACT CONDITIONS
Paraphimosis

- Swollen penis
- Difficulty to urinate
- Think of rabies!

- sedate
- Clean penis
- Lubricate
- Return
- If difficult put in purse
  - string
    - 2 fingers
- Antibiotic cream
- Owner to give water
Thank you

END OF PHASE 1