Case studies- bull reproductive problems [figures]

Figure 1

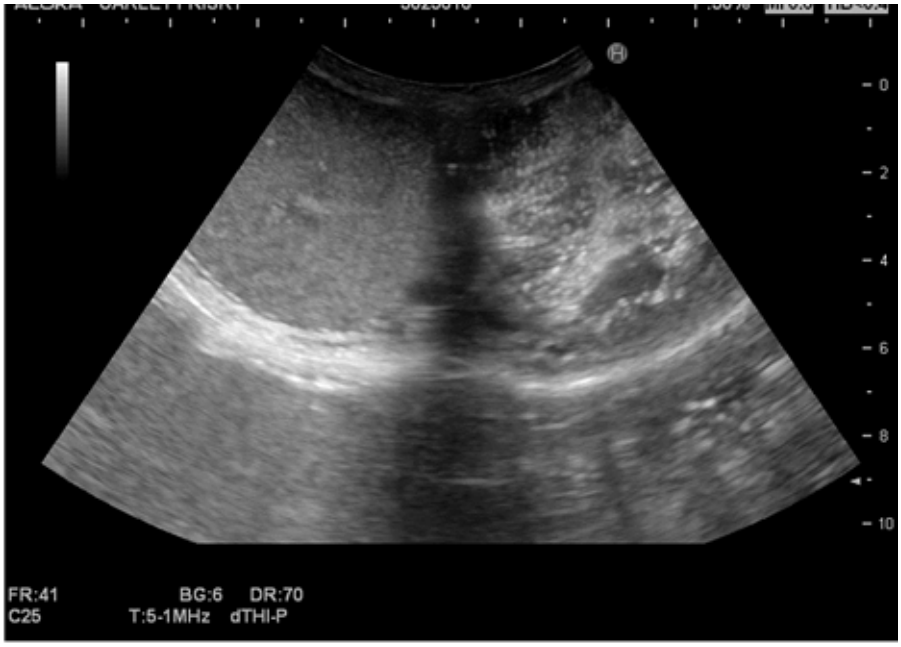


Figure 2

Figure 3

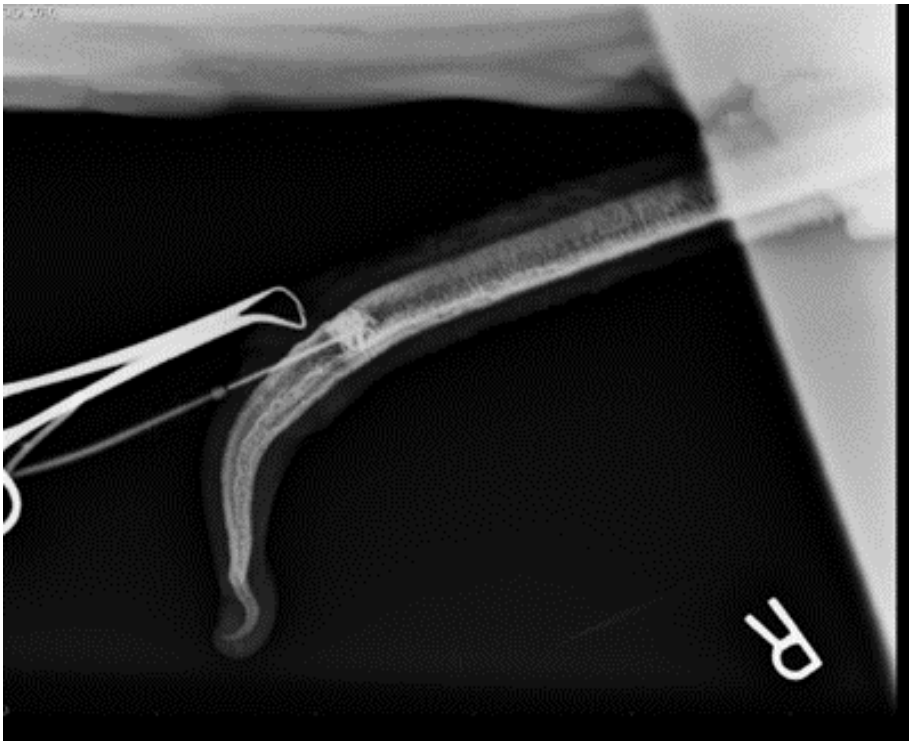


Figure 4

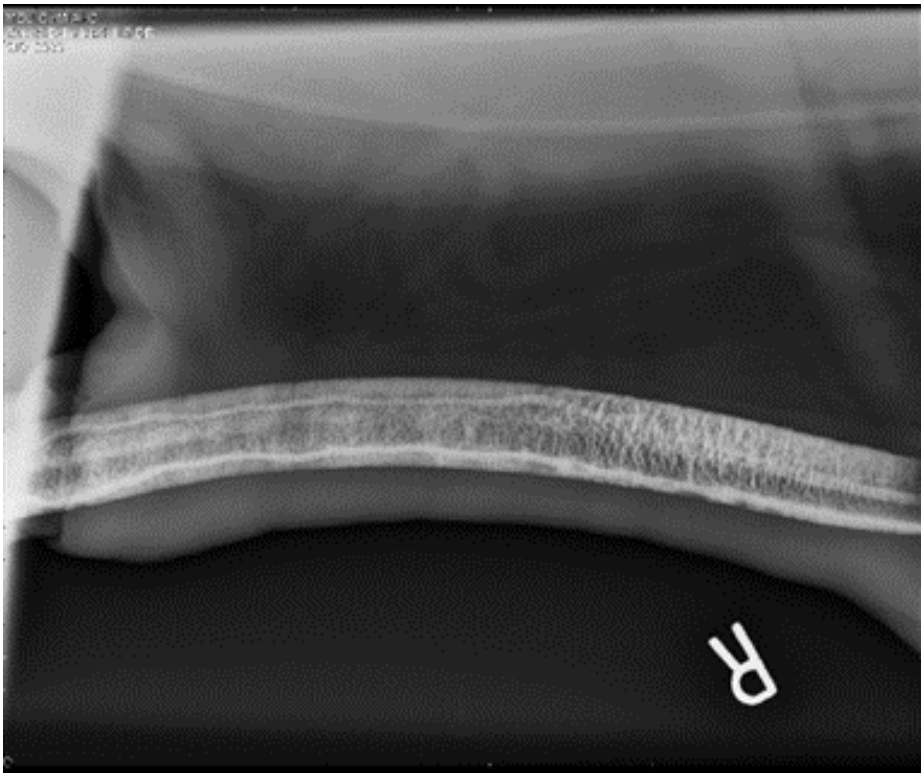
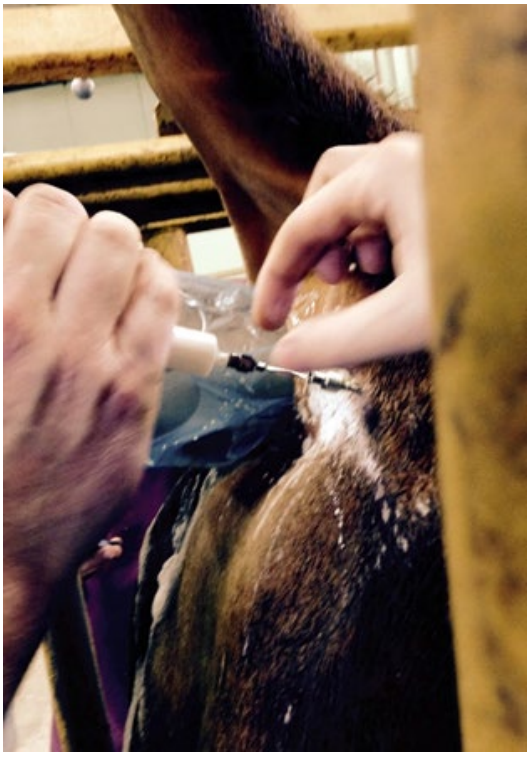


Figure 5

Figure 6



Case Studies of Bull Reproductive Problems

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Abstract

The discussion of four cases that a bovine practitioner is likely to encounter. Diagnosis and management is covered as is prognosis and practical application as it refers to similar cases.

Key words

Bull, BSE, urogenital, testes, shunt, vesiculitis

Case #1- Routine BSE

Fall, 2016

Signalment- Angus bull, 7 y, good physical condition

History- always met BSE standards (85% + N morphology)when checked annually, very efficient breeder (60%+ calves born in first 3 weeks of breeding season), bull used 2X yearly (2: 65-70 day breeding seasons)

BSE- morphology 71% Normal, predominant defect proximal droplet, Rt. Testicle soft on palpation

Client communication- could be beginning to exhibit age related testicular degeneration, use this breeding season, but have BSE performed prior to each subsequent season (use)

This bull was then turned out December 1 through February 15 (single sire group) for a fall calving group. Owner did not have cows pregnancy checked, but very observant and believes all cows bred (based on non-return). Because he planned to use bull with another group (for spring 2018 calving) on April 1, and we had previously been advised that bull's fertility could be declining, he returned to have bull checked.

Spring, 2017

March of this year- bull presented for BSE

On palpation right testicle very hard.

Bull collected & ultrasound performed on scrotal contents

[Insert Figure 1 here]

BSE- morphology 88% N, motility gross VG, individual 70-89%

Our hypothesis is that in the fall the "damaged" (soft) right testicle was contributing to the ejaculate and the reason for the relative increase in abnormalities. After fibrosis occurred the

right testicle became completely nonfunctional and the ejaculate we evaluated was the product of the normally functioning left testis.

Follow up – During breeding season the owner observed cows for return to heat, felt like bull was efficiently getting cows bred.

Take home message- Ultrasound is a valuable tool for evaluation and tracking changes over time thus potentially useful for a prognosis, but don't fail a bull based on ultrasound.

Case #2- Scrotal enlargement

Signalment- Red Angus bull, 18 m, good physical shape

History- owner/rDVM suspects inguinal hernia

Physical Exam- temp of 105.7° F, Scrotum- extensive, bilateral swelling, not painful, rectal- inguinal rings - Normal

[Insert Figure 2 here]

Hemicastration- good recovery

Nice bull, but value? [$3000-3500] (Valuation was when he had 2 testicles)

Now just 1 testicle

Post-op collected in 10 weeks- 85% normal sperm morphology

Follow up – donated to an experiment station farm that was using Red Angus bulls. Finished 3rd season – normal compliment of cows (30-35).

How fast do we need to be in removing "bad testicle" to prevent damage to contralateral testis?

7 bulls- that didn't make the experiment station production sale

- They had been on gain test
- 15-16 month old bulls
- 3 had previously passed BSE, but culled due to performance
- 4 Had not passed BSE
- Herdsman wanted all castrated

This provided an opportunity for a simple, impromptu "study". I performed BSE on all, castrating those that failed & one that had excellent morphology (89%N). Testicles were saved for histology. I then administered 40mg dexamethasone to a bull with excellent morphology (84%N) and he was castrated 9 days later. Histologically, significant indication of testicular degeneration was already present.

Take home message- In the case of an abnormal testicle with inflammation & likely negative effects to contralateral testis- remove ASAP.

Case #3- Unable to breed

Signalment- Brangus bull, 2 ½ y, good physical condition

History- Had been raised on the farm, had always met standards on BSE. Producer's daughter was rDVM. Pregnancy check on first group (was utilized as cleanup following AI), believed he had bred a couple (?). Next group- no pregnancies and on observation of breeding act- not achieving intromission.

Electroejaculation – erection that was slowly lost- suspect Corpus Cavernosum Penis (CCP) shunt.

Radiographs with contrast material

[Insert Figures 3 & 4 here]

No contrast material outside of the CCP

This was confusing because we believed there was a shunt. Methylene blue was then injected into the CCP & following stimulation with the electro-ejaculator a shunt was revealed.

[Insert Figure 5 here]

Follow up – Surgical repair (attempted closure) of this was unsuccessful. There appeared to be multiple small shunts. These are typically believed to be congenital (developmental and not genetic) Because of the bull's value he is being used as AI sire.

Case #4 Vesiculitis

Bull presented for BSE

Signalment- Fleckvieh bull, 18 m, good physical condition, **History**- raised with 12 other bulls, good anthelmintic/vaccination program

BSE- Right vesicular gland enlarged, 3-4 WBC/ high powered field

Treated with Draxxin®

Return in 30 days for recheck

Recheck – did not respond to treatment

Micotil® administered & owner instructed to repeat in 3 & 6 days (3 total treatments)

Re-examined in 30 days – gland still enlarged & WBC in ejaculate

Right gland injected with penicillin.

Procedure:

After an epidural, place a 12 gauge needle through the skin in the ischiorectal fossa. This will facilitate the passage of a long (40-44cm) 18 or 16 gauge needle. If your needle has a stylet that will make it easier to direct. Push needle into affected gland. Inject 15-40 ml of penicillin (amount used is enough to completely fill gland. Alternatively, chemical ablation of the entire vesicle can be accomplished with the injection of 4% formaldehyde solution into the gland. If

you are going to do this, first inject 3-5 ml of saline to ensure that your needle is in the desired location.

No WBC in ejaculate on recheck.

[Insert Figure 6 here]

Vesicular adenitis review

Vesicular adenitis which is often (and incorrectly) referred to as seminal vesiculitis is most commonly encountered in yearling bulls at the time of BSE and is typically manifested by enlarged vesicular glands and pus (White blood cells) in the ejaculate. The administration of systemic antibiotics, specifically a single tulathromycin injection or two tilmicosin injections 3 days apart (both at label dose) have been shown to be effective, as have intraglandular injections of ceftiofur and procaine penicillin (both at 10% their recommended parental dose in an injection volume of 6ml). The same group also reported that a significant number of young bulls will recover without treatment.

Thus, the most reasonable management approach for young bulls diagnosed with this condition at BSE is the administration of one of the aforementioned systemic antibiotics followed by a BSE recheck in 30-45 days. Note- WBCs in an ejaculate can be identified, as they are about 1.5 X the width of a bovine sperm head. However if there is a question as to identification, you can stain a semen sample with Diff-Quik™ stain.