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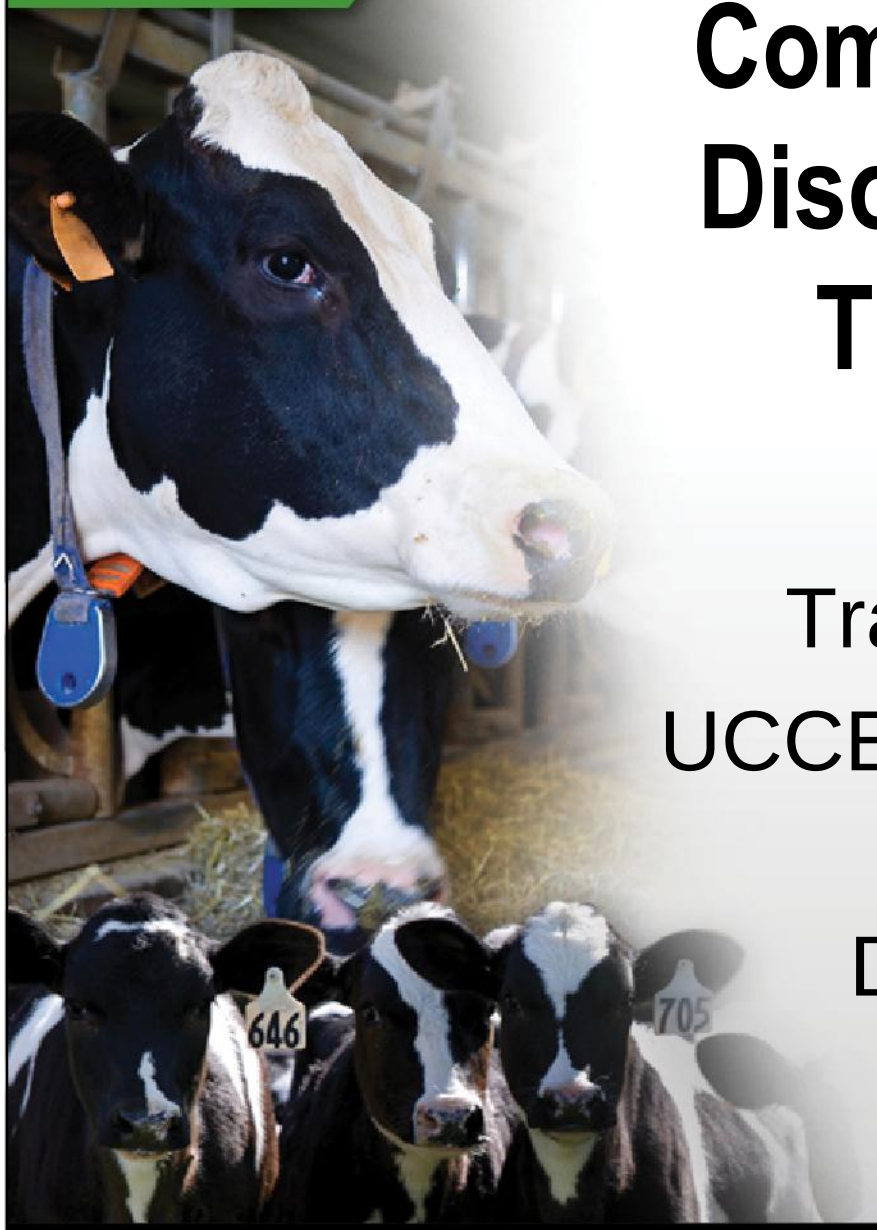

Common Fresh Cow Disorders – Causes, Treatment, and Prevention

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Why Are We Here?

Fresh Cows Need Special Care

- Calving and sudden milk production demands are extremely stressful for the cow
- Many things can go wrong
- Problems as a fresh cow will negatively affect milk production and reproduction for the whole lactation
- Prevention is best
- Early treatment is essential

Overview

- General comments on fresh cow programs
  - Communication and working together
  - Benefits of monitoring/recordkeeping
    - Herd level
    - Individual Animals
  - Importance of following protocols

Overview 2

- Review of Common Fresh Cow Problems
  - Hypocalcemia
  - Retained Placenta/Uterine Infections
  - Ketosis
  - Displaced Abomasum
  - Other disorders of high risk (mastitis, pneumonia, digestive upset)
- Drug Residue Avoidance
- Vaccination Programs

Communication and Teamwork

- The Dairy Team
  - Owner/Herdsman/Manager
  - Employee(s) in charge of fresh cows
  - Veterinarian
  - Nutritionist
- Communication between team members is essential to the dairy's success

Monitoring

- Know what normal/acceptable rates of diseases are for your dairy
- Keep records so that you can detect when something is going wrong
- Be consistent and vigilant
- Communicate deviations to others on the team – owner/manager, veterinarian, nutritionist - so problem can be addressed

The Value of Protocols

- Even the best protocol will fail if it is not followed properly
- Are the protocols for your dairy:
  - Written down and accessible?
  - Reviewed with new employees that have fresh cow responsibility?
  - Available in English and Spanish?
  - Reviewed and updated regularly?

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Fresh Cow Treatment Equipment Checklist

- Is the fresh cow area/cart clean and well organized?
- Do you have all the tools you need to implement the protocols?
- Equipment in good repair?
- Equipment sanitized between uses?(between cows is ideal but may not always be practical/possible). Disease spread can happen from equipment!

Supportive Therapy

- General therapy that helps the cow to feel better and recover from illness
- Will vary according to preferences and opinions of dairy manager/owner and veterinarian, as well as specific needs of the dairy

Supportive Treatment May Include:

- Replace Calcium +/- Phosphorous
  - IV for clinical
  - Oral for subclinical/other disease
- Replace Fluid/Electrolytes
  - Oral fluids/Drench
  - Hypertonic saline (cow MUST drink water or be given oral fluids)
- Energy
  - Dextrose/propylene glycol
- Probiotic/prebiotic to help restore rumen function
- Providing a clean, comfortable place for the cows is also key
- Don’t forget food and water!

Common Routes of Administration of Medications

- IV – Intravenous – In the vein
- SC – Subcutaneous – Under the Skin
- Oral – Via the mouth
- IM – Intramuscular – In the Muscle
- Intramammary – in the udder

General Risk Factors for Fresh Cow Diseases

- Overcrowded close-up and fresh pens
- Inconsistent/inaccurate feed delivery to close-up cows
- Heat Stress
- Dystocia/Calving Problems
- Abortion/Stillbirth
- Body Condition too high or too low (too fat or too thin)
- Heifers grouped with adult (lact 2+) cows

Hypocalcemia

- Low blood level of calcium
- Two main forms
  - Clinical
  - Subclinical
- Calcium metabolism is closely related to phosphorous
  - Proper ratio in the diet is important
  - Cows with clinical hypocalcemia often need phosphorous as well – work with vet on specific protocols

Calcium Functions in the Body

- Structure of bone and teeth
- Muscular contractions
  - Skeletal and cardiac muscle
    - Heart beating and movement
  - Smooth Muscle
    - Intestine –
      - Peristalsis (gut movement),
      - rumen contractions
    - Uterus
      - Expulsion of fetal membranes (Placenta)
      - Uterine involution (return to normal size)

Hypocalcemia: Clinical vs Subclinical

- Clinical Hypocalcemia – “milk fever”
  - Cow appears weak, often unable to stand
  - Extremities cold, especially ears
  - May see muscle twitching
  - If left untreated, cow can die
- Subclinical hypocalcemia
  - Cow not visibly ill, but blood calcium is low
  - Shows up as other diseases (metritis, RP, DA, etc)

Treatment of Hypocalcemia

- Clinical
  - Usually IV Calcium
    - Go slow! Too fast can kill the cow!
    - May put additional calcium SC (Ca only! Not Dextrose!)
    - Oral calcium and energy sources to follow up
    - Observe cow closely for other diseases
- Subclinical – since hard to tell if cow is having other problems due to calcium, usually oral Ca is part of supportive care for all diseases.

Oral Calcium

- Many forms of delivery available
- Bolus, Gel, Drench
- Follow the protocol for your dairy

Prevention of Hypocalcemia

- Fresh cow disorders usually go back to the transition cow diet
- DCAD – Dietary cation-anion difference
  - Proper balance between different minerals is important for cow to maintain proper blood levels of diet
  - If we have problems with fresh cows – go back and look at dry/closeup cows.

Monitoring Close-up Cow Urine pH to Help Prevent Hypocalcemia

- Many farms check close-up cow urine pH to detect risk of hypocalcemia (DCAD Balance)
- Urine pH is affected by DCAD
  - Mineral mix added to closeup ration
  - Composition of minerals in feed (e.g. high potassium hay)
- Can monitor with a pH meter or paper to check range

Checking Urine pH

- Can use paper or handheld meter
- Check 8-10 close-up cows (2nd lact or greater)
- Desired pH range is 6-7
- If out of range – Investigate reason

Metritis

- Infection of the uterus
- Uterine Discharge
- Endometritis, metritis– varying degrees of disease – We will use metritis to describe both.
- Severity ranges from mild discharge to toxic with systemic illness

Photo:http://www.msd-animal-health.co.uk

Risk Factors for Metritis

- Dystocia (hard calving that needed correction)
- Twins
- Retained Placenta
- Abortion/Stillbirth
- Fat Cows/Heifers
- Heat Stress
- Overcrowded Pens
- Contamination from unclean:
  - Calving area
  - Calving equipment
  - Calving procedure
- Cows and heifers housed together

Diagnosis of Metritis – Use Your Eyes and Nose!

- Covered in depth by Dr. Silva-del-Rio
- Recap:
  - Vaginal discharge –
    - Dark brown/pus
    - Foul smelling
    - +/- fever
    - Cow may be noticeably sick/off feed

Pyometra

- “Pyo” = Pus “Metra”=Uterus
- Sometimes called chronic endometritis
- Cow not ill
- Fluid filled uterus (Pus)
- Discharge is white and does not smell bad like metritis
- Antibiotics, supportive care not needed
- Prostaglandin (see treatment of metritis)

Treatment of Metritis

- Supportive care as needed
- Anti-inflammatory if fever
  - Aspirin oral
  - Flunixin meglumine (IV only! Review why)
- Systemic Antibiotics
  - Depending on severity
  - Follow label instructions! Route/dose/withdrawal time IMPORTANT!

Treatment of Metritis (cont)

- Prostaglandin –
  - Works to lyse corpus luteum on ovary and allow cervix to open, promoting drainage
  - Protocols vary - most effective after 14 days fresh

Intrauterine Treatment?

- Uterine infusion with an AI pipette or uterine boluses
  - Antibiotics (usually oxytetracycline)
- Scientific studies have not shown benefit, and many vets feel there is potential to make things worse
- Increased risk of antibiotic residues!
- Some vets/producers feel benefit
- Follow the protocol on your farm!

Metritis Prevention

- Clean calving facilities and equipment
- Use of proper (gentle and clean!) technique when assisting calving
- Practice excellent hygiene and use lots of lube!
- Proper care of cow after calving
  - Follow protocol!
  - Observe cow extra carefully for early signs of problems

Metritis Prevention (cont)

- Avoid overcrowding close-up and fresh cows
- Make sure fresh cows always have fresh, well mixed feed available
- When possible, group cows and heifers separately

Retained Placenta (RP)

Photo Credit: http://www.nadis.org.uk

- Placenta/fetal membranes normally expelled within 12 hr
- If not, this is called retained placenta
- Same risk factors/causes as metritis

Managing RPs

- Follow the dairy protocol for treatment!
- Manual removal may do more harm than good – be careful and check with vet on how/when to do this
- Treatment involves supportive therapy +/- antibiotics. (Follow the label on the medicine for dose/route and the protocol for withdrawals!) IMPORTANT!

Ketosis

- Ketosis is a sign that cow is not getting enough energy from the diet
  - Overall energy demand exceeding intake
  - Intake may be depressed because of other illness
- Ketones are fat breakdown products, and are also a product of fermentation in the rumen
- Too many ketones makes the cow sick

Diagnosis of Ketosis

- See description by Dr. Silva-del-Rio
- Physical appearance
  - Depressed, dull, off feed
  - Milk production may be down
  - Smell breath>>acetone (fingernail polish)
- Tests:
  - Blood, milk, and urine tests
  - Advantages and disadvantages to each test
  - Work with vet on protocol/follow protocol

Testing Multiple Animals

- If many cases of ketosis and other fresh cow problems are happening, the vet and nutritionist may run blood tests on a number of cows to see what is going on
  - NEFA
  - BHBA
- These tests results can help target where the problem is and aid in management changes to stop it.

Treatment of Ketosis

- Severe Ketosis – IV Dextrose (Never put dextrose SC! Can cause problems)
  - Examples
    - "large" on urine/milk
    - Blood level above specified cutoff (protocol)
- Glucose precursor – Propylene glycol
  - Processed by rumen and liver into VFA and glucose
  - Delivered orally, often in a drench

Corticosteroids and Ketosis

- Corticosteroids
  - Not used in all protocols
  - Can help the liver produce and save more glucose so the cow has more energy available
  - Examples include Predef/dexamethasone
  - Need to be done very carefully and according to protocol – FOLLOW THE PROTOCOL!
  - Too much or too long duration of treatment can make things worse, especially in fatty liver

Fatty Liver Syndrome

- Often associated with ketosis
- Liver cannot process fatty acids and ketones as fast as they are delivered
- Fatty deposits in liver interfere with normal liver cell function, making the problem worse.
- Treatment is supportive, same as with ketosis

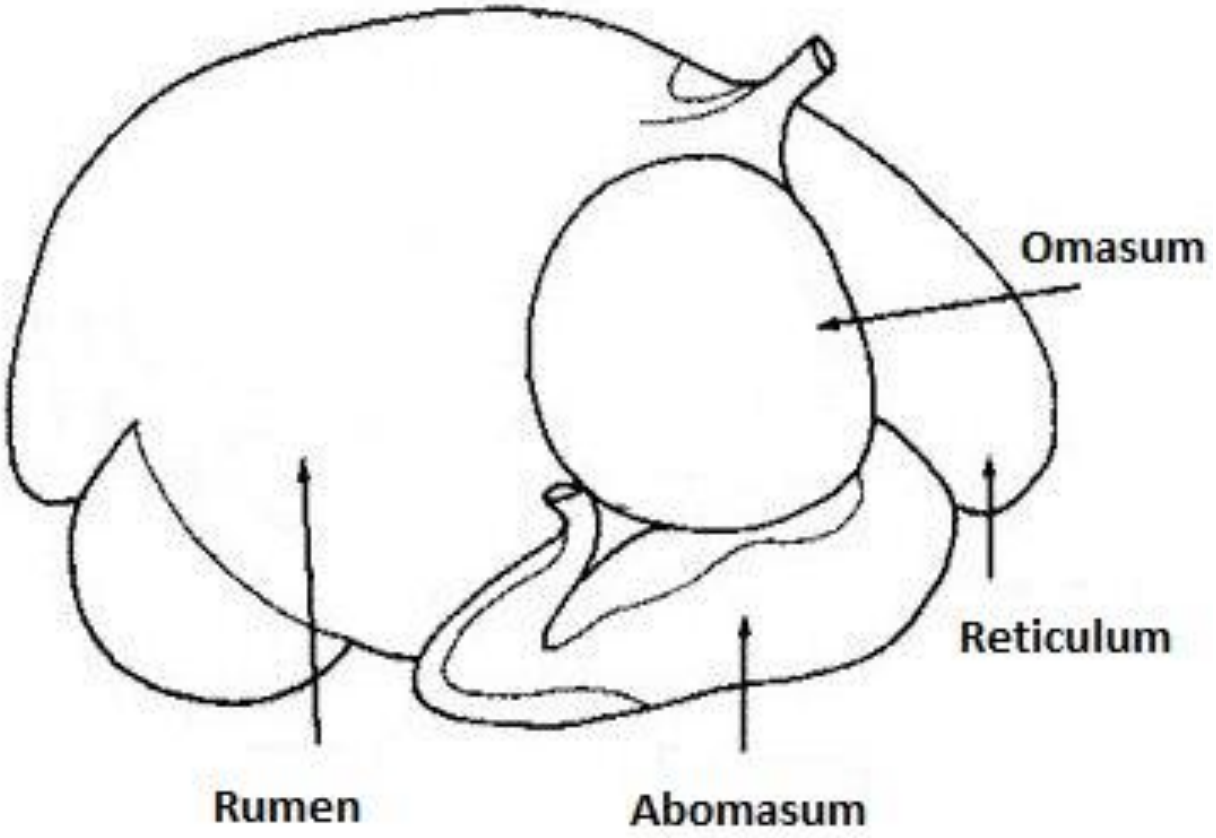
Prevention of Ketosis and Fatty Liver

- Avoid overcrowding in close-up pens
- Cows in proper body condition at calving
  - 5 point system (1-very thin; 5= super fat)
  - Ideal score at calving is 3.5-3.75
- Proper feed management
  - Adequate amount of feed available to all cows
  - Delivered and pushed up consistently
- Diet supplements/additives may be helpful

Displaced Abomasum (DA)

- Abomasum usually situated below and to the right of the rumen
- Under certain conditions when the cow is ill, it inflates with air and moves up to the left or the right
- At a minimum, requires medical treatment, but usually some level of surgical correction.

Bovine GI Structure



DA – What Happens

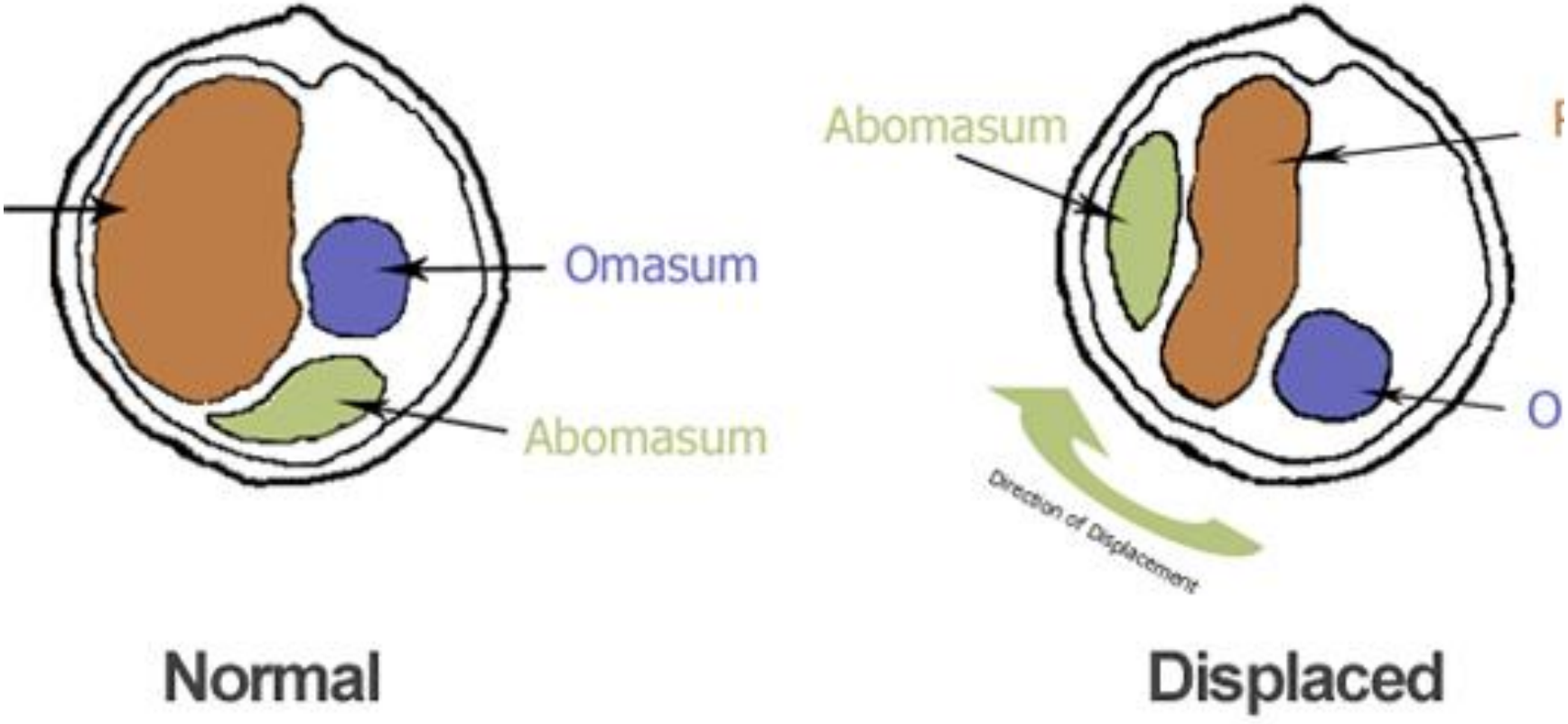


Photo Credit – Mydairyvet.com

LDA vs RDA

- Left side = LDA; Right = RDA
- RDA – True emergency– can often result in a twist (volvulus) which can damage the blood supply and tissue of the abomasum and potentially kill the cow
- LDA – Should be dealt with in a timely manner, but can be managed medically while waiting to do procedure

Cause of DA?

- Usually cow is sick from something else – look for a cause when examining cow
- Cow feels sick, goes off feed
- Abomasum is empty, and fills up with gas
  - Low Ca>>decreased motility
- Abomasum floats up to left or right

Diagnosis of DA?

- Dr. Silva-del-Rio will be covering this topic in depth
  - Cow off feed, often down in milk
  - Usually have concurrent illness
  - Characteristic “ping” noise when checked with stethoscope
  - Other organs can make “ping” noise – know how to tell the difference

Treatment/Correction of DA?

- Prevention is best! If she doesn't get a DA, we don't have to treat it!
- First question: Is this cow worth treating/fixing?
  - Milk production
  - Past production/repro history
- Usually some type of correction is needed

Non Surgical Management of LDA

- In some cases, medical treatment of underlying condition and supportive care may resolve problem (LDA only)
- One other option – Roll the cow, allowing LDA to replace; treat with supportive care
- In both cases, there is a significant chance that the DA will reoccur, so usually some type of surgical intervention is needed.

DA Treatment: Surgical Options

- Most include steps to deflate DA, replace, and sew in place
- Standing surgery either right or left approach
  - Depends on vet preference, both work well if cow is appropriately treated afterward (underlying condition + supportive care)
  - Cow lyingon her back
  - Not very common in CA or overall. Done by some in the Northeast, Midwest.

LDA Surgery

Photo Credit:
http://www.nadis.org.uk

DA Treatment: Roll and Toggle

- This is a type of “closed” surgical technique.
- Success rates can be comparable with surgery
  - Key is to early intervention: Find the DA and treat the cow as soon as possible
  - Preference varies between dairy/vet

DA: Roll and Toggle

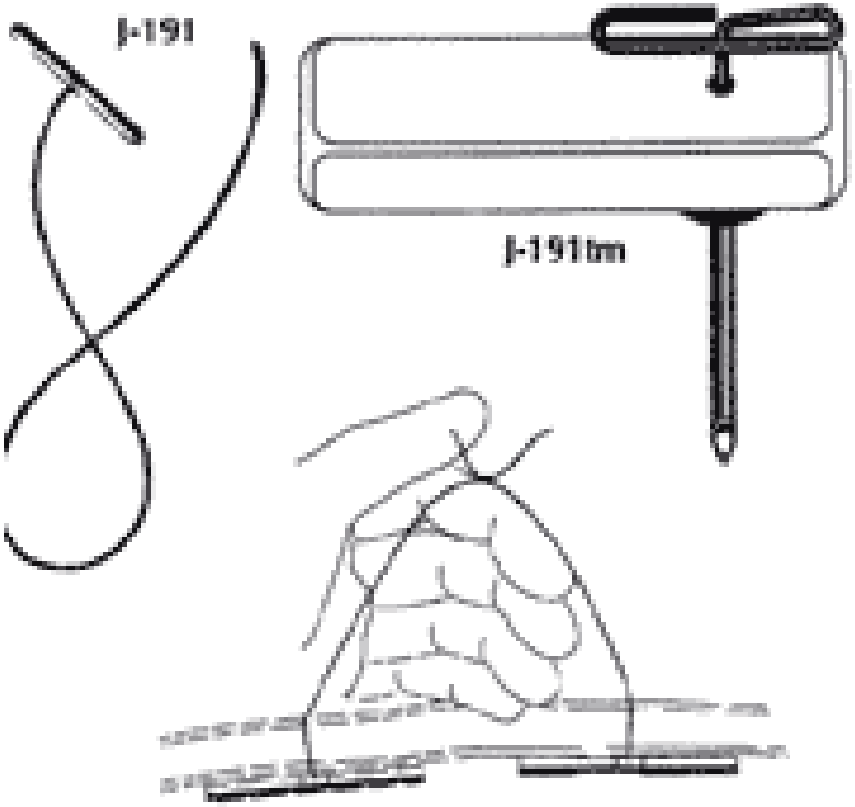


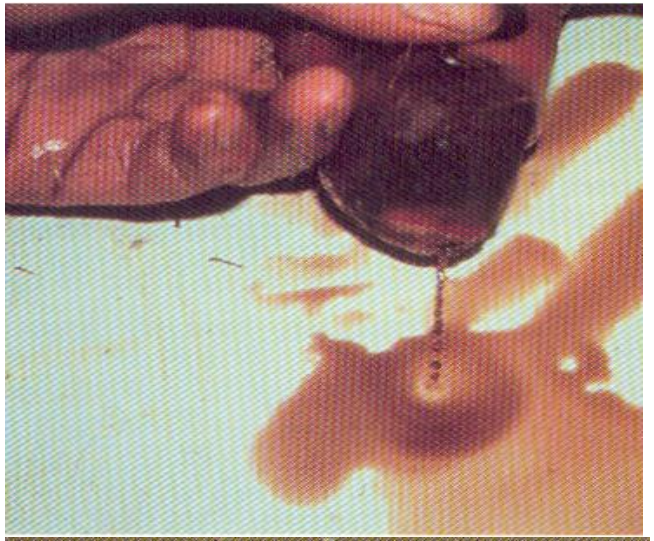
Photo Credit: *www.**ldatoggle**suture.com*

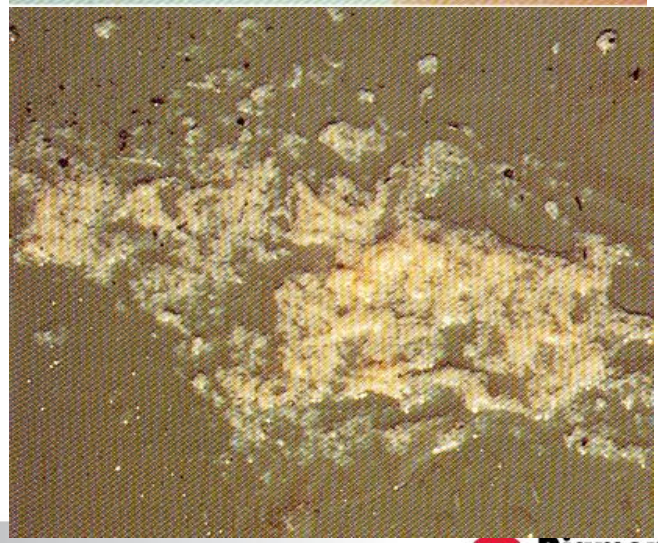
Other Diseases of Importance

- Mastitis
- Pneumonia
- Enteritis/Diarrhea
- Lameness

Mastitis

- Infection of the mammary gland (udder)
- Fresh cows at increased risk
- Usually caught and treated during milking
- Check for mastitis during physical exam





Pneumonia

- Lung Infection
- Off feed, +/- fever, increase resp rate
- Many organisms can cause – usually a combination of viruses and bacteria
- Treatment: Supportive and Antibiotic

Enteritis/Diarrhea

- Loose, watery diarrhea is not normal and should be investigated
- Infectious causes:
  - e.g. Salmonella, Johnes
- Non Infectious Causes Include:
  - Acidosis
  - Digestive upset from feed change
  - Toxin exposure

Lameness

- Very common
- Very painful
- Many other fresh cow problems result because cow does not get up and eat
- Don’t let lame cows go untreated – they will get worse!

Photo: http://www.nadis.org.uk

Administering Medications and Drug Residues

- Many medications have a withdrawal time for meat, milk, or both
- Milk or meat from cow cannot be sold during this period
- Animals (at slaughter) or milk with drug residues = HUGE PENALTIES
- Loss of public confidence

Avoiding Drug Residues

- FOLLOW THE LABEL on the medication for proper dose, route, and withdrawal times!
- Sometimes vets may choose a dose that is different from the label – follow the dose and withdrawal they recommend
- WRITE EVERYTHING DOWN!

Vaccinations

- We give dairy cows many vaccinations as part of the routine, to prevent disease
- Like with medications, follow all label instructions for dose and route
- Vaccines given incorrectly can result in tissue/meat damage, off feed (painful) cows, and even death to the cow
- Have epinephrine ready in case of allergic reaction

Vaccine Handling

- Even the best vaccine will not work if it is not handled properly by the person using it
- Temperature of storage
- Time after live vaccines mixed (<1hr)
- Don’t leave in the sun
- Don’t leave in extreme cold
- Use clean syringes
- Change needles when needed

Recap

- Fresh cows are at high risk for disease, which affects the whole lactation
- Fresh cows should be monitored daily as part of a program
- Any abnormal behaviors or symptoms should be investigated thoroughly
- Follow all protocols – they are there for a reason
- COMMUNICATE!

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Questions?

THANK YOU!

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