DAIRY VETERINARY NEWSLETTER

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Impersonating a Veterinarian - $4.7 Million Cattle Fraud Scheme

In my career I have not observed or heard of many specific instances of someone impersonating a veterinarian. People offering services that are supposed to be limited to those performed by veterinarians is more common in my experience than actually impersonating a veterinarian. I looked up the subject of impersonation of a veterinarian on the internet and found a few cases over the last 8 years. They ranged across many types of practice and species of animals. Some of the cases are remarkable in terms of how many years and procedures were involved, surgeries performed, advice given to clients, deaths of animals, etc. One penalty was reported as 6 months in jail and a fine. (Many cases, even from years ago, were referenced in stories where no sentencing had occurred yet, and there were no readily found updates on penalties.) Recently, a case of an accusation of impersonating a large animal veterinarian has surfaced:

A report by W. Bechtel in Bovine Veterinarian, May 4, 2018 describes a "fake veterinarian" admitting to participation in a $4.7 million fraud involving purportedly buying and selling cattle. "Robert D. Hawkins has consented that he aided Cameron J. Hager in defrauding more than 90 investors from at least 21 states in a $4.7 million cattle fraud scheme", says Bechtel's article. Mr. Hawkins "has admitted to his involvement" and is "cooperating with authorities", according to the report.

The scheme lasted nearly 3 years according to the Missouri Securities Division, from July 17, 2015, to March 28, 2018.

In an update on Mr. Hager's case, the U.S. Attorney's Office of the Western District of Missouri reported on June 26, 2018: "Cameron J. Hager, 42, pleaded guilty before U.S. (federal court) District Judge Gary A. Fenner to one count of wire fraud and one count of money laundering. Hager, who operated 5A Holdings, LLC, admitted that he engaged in the fraud scheme - - Hager solicited victims to invest in a 'cattle fund' that was used to purchase herds of cattle to be sold later at a substantial profit, although he never actually purchased or intended to purchase any cattle."

A related story also by Bechtel explains that victims paid Hager amounts from $1,000 to $267,000 to invest in the aforementioned "cattle fund" to purchase cattle "from farmers or ranchers who were financially distressed and unable to maintain their herds" until "there was an optimum time to sell" for a profit. "Payments were made to some investors by Hager in an effort to recruit more investors through their referrals. None of the money paid to investors came from cattle sales, it essentially operated as a Ponzi scheme. It is estimated that $3.5 million was misused by Hager."

What exactly was the role of the "veterinarian"? Missouri Securities Division reports, "The division's findings allege that Hawkins posed as a veterinarian for Hager's company, 5A Holdings LLC, to show investors cattle that he claimed were owned by 5A. Per the (consent) order, Hawkins will pay $20,000 to the Investor Education and Protection Fund, with $10,000 suspended for 10 years so long he doesn't violate the Missouri Securities Act or the terms of the order. He is restrained from selling securities and barred from registering as an investment agent in Missouri. Hawkins will also cooperate with the division in any pending proceedings in this matter." While the reports on this story specify the

finances and forfeitures of Hager, nothing is mentioned about any money that Hawkins may have been paid or any forfeitures.

Penalties for impersonation of a veterinarian

Penalties vary by state, but many states have minor penalties for the first offense of impersonation of a veterinarian. The AVMA has compiled a list of penalties by state, which can be found at: https://www.avma.org/Advocacy/StateAndLocal/Pages/scope-unauthorized-practice.aspx

Four states consider this a felony, while many states do not specify the details of the penalty.

Utah's penalty is stated by AVMA as:

- Cease and desist order.
- Class A misdemeanor.
- If any written order issued under this title or if an injunction or temporary restraining order issued by a court of competent jurisdiction relating to this title is violated, the court may impose a civil penalty of not more than two thousand dollars ($2,000) for each day the written order, injunction, or temporary restraining order is violated, if the person in violation has received notice of the written order, injunction, or temporary restraining order.

Acoustic Pulse Therapy for Bovine Mastitis

At the recent American Dairy Science Association meeting, I saw an interesting presentation by G. Leitner. A few days ago he and co-authors D. Zilberman, E. Papirov, and S. Shefy published a paper in PLOS1, July 10, 2018. The full paper can be found at: https://doi.org/10.1371/journal.pone.0199195

The presentation and paper were both regarding "Assessment of acoustic pulse therapy (APT), a non-antibiotic treatment for dairy cows with clinical and subclinical mastitis". I have often thought that it would be a great contribution if we had some kind of non-invasive wave or ultrasonic treatment for mastitis in farm animals, including of course dairy cows. The paper states, "A proprietary Acoustic Pulse Therapy (APT) device was developed specifically for treating dairy cows. The APT device was designed to produce deep penetrating acoustic pulses that are distributed over a large treated area at a therapeutic level." The authors make clear that the study was funded by Hi-Impacts LTD., the employer of two of the authors, and the device has a US patent.

The term MPa is introduced, but never spelled out or defined. This appears to be common; journals containing publications regarding MPa seem to consider it such a common term, like SCC in mastitis publications, that it needs no introduction. I discovered that MPa is megapascals, 1,000,000 pascals, a unit of pressure. This is 1,000 KPa, or kilopascals that are sometimes used to measure vacuum in milking systems. One Mpa = 295" Hg pressure, nearly 10 atmospheres, a lot of pressure. Moreover, the pressure generated in APT is quite high, often from 25 - 100 MPa.

The authors describe APT for treatment of cardiac ischemia, kidney stone fragmentation, and musculoskeletal diseases including plantar fasciitis, tennis elbow, and golfer elbow in humans. Over the last 15 years, APT has been introduced as a treatment for many musculoskeletal diseases of horses and dogs. They describe their device: "A new APT technology device has been developed for dairy cows. The device produces low power acoustic pulses with capability of deep tissue penetration that allows the pressure wave to be distributed over a large treatment area of the cow's udder - - (the) treatment applicator is placed over the skin of the treated gland. A special gel is used to ensure good transfer of the acoustic pulse to the treated tissue. The effect of the APT treatment produces pressure on fluid or soft tissue sites." There was no other description of the gel. Whether "lube" such as obstetrical or ultrasound lube could be used was not explained.

Figure 2 on the next page illustrates the acoustic applicator on the skin of the udder.

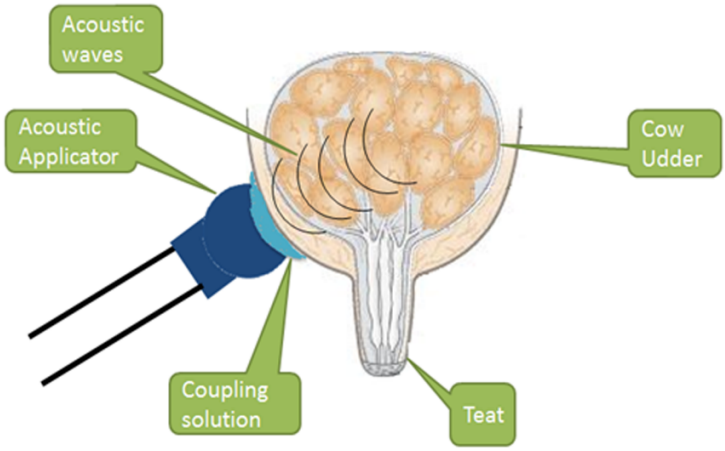

Fig 2. Schematic action of the acoustic pulse. A scheme of the new technological device for cow treatments producing high powered acoustic pulses distributed on a large treatment area with deep penetration via the applicator. (*From Leitner et al., PLOS1, July 10, 2018*.)

A study was conducted on 3 Israeli Holstein commercial dairy herds with milk production of approximately 27,500 lb/305 d and bulk tank SCC from 170,000 to 230,000/ml. APT treatment of clinical and subclinical mastitis was 400 pulses (3.5 min/treatment), shockwave frequency of about 1.9Hz, with the pulse applicator over two regions of the mastitic quarter. SCC was monitored by on-farm devices and "all cows with >6.0 cells/ml", meaning 10^6, or SCC 1,000,000/ml were further tested with the California mastitis test (CMT); quarters with CMT score >3 were cultured using standard NMC methods and SCC were measured using a Fossomatic machine. Cows were blocked into groups of 3 by bacteriology results and "cow data" such as days in milk, days carried calf, and milk yield; 2 cows were randomly assigned to APT 4 times, 2-3 days apart, and one cow was not treated. Cows were apparently retested for between 3 weeks and 3 months following treatment. Exact criteria for a bacterial cure were not explained; presumably the recovery of the original pathogen(s) found was defined as a failure of treatment. Exactly how many follow up cultures were needed at a minimum, or how many times a quarter had to be negative vs. positive for the original pathogen to be defined as a cure or failure of treatment was not stated.

Clinical mastitis, studied in only one herd, "was defined by an inflamed gland, decreased milk yield and increased conductivity." Details of clinical criteria, milk appearance, or electrical conductivity were not provided. "The herd's veterinarian determined the course of treatment to be taken in either a control group that received antibiotics and/or NSAID or [an APT] treatment group." Criteria used to determine which group a cow entered and what if any steps were taken to make sure the treatment and control groups were equivalent were not reported.

A description of a mixed model and a general linear model were provided, but what defined a bacterial cure was not explained. As above, I speculate that a cure was when the original pathogen(s) were never recovered post-treatment. The table below, from the paper, shows the cure rates for 116 subclinical cases, however they were determined:

Table 3. Bacteria cure of 116 cows from 3 dairy herds treated or not with acoustic pulse therapy (APT).

Bacteriology	Treatment			Control			P [*F*]
	pre	post	% Success	pre	post	% Success	
E. coli	5	0	100.0	6	2	66.6	<0.001
Streptococci	22	14	36.4	11	9	18.2	<0.001
CNS	26	12	53.8	15	13	13.3	<0.001
S. aureus	4	1	75.0	-	-		
Total bacteria positive	57	27	52.6	32	24	25.0	<0.001
NBF	21	No new infection		6	No new infection		

CNS—coagulase negative staphylococci

NBF—no bacterial finding

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Statistical differences in cure rate were determined by chi-square, and were significantly higher for all subclinical pathogens studied. Overall, 30/57 (53%) of APT treated mastitis cases and 8/32 (25%) of controls were cured, all $P < 0.001$. There were 27 cases (21 treated, 6 controls) with no bacteria ever found. The blocking of cows into groups of 3 and assignment to treatment clearly did not emphasize pathogen(s) as much as other factors, because for some pathogens the ratio is far from 2 treated:1 control. By far the most common pathogens were "Streptococci" and CNS (coagulase-negative staphylococci), and their cure rates were markedly lower than cure rates commonly reported for those bacteria in bovine mastitis cases. There were no control cases among the 4 cases of *S. aureus*.

However, the difference in cure rates appeared biologically and economically significant as well as statistically different. Despite some incomplete description of methods, the results are interesting and suggest that further investigation of acoustic pulse therapy of mastitis is warranted.

Please let us know your comments and suggestions for future topics. I can be reached at (435) 760-3731 (Cell), (435) 797-1899 M-Tues, (435) 797-7120 W-F or **David.Wilson@usu.edu**.

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