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Bovine Surgery: An Expanding Field

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Bovine Surgery, an expanding field



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The most common disorders seen are associated with one of the cow's four stomachs, the abomasum, which is the true stomach. It can become displaced, usually within six to eight weeks after calving, and then must be surgically returned to its proper position.

"This problem wasn't diagnosed until 1959," said Dr. Donawick. "And the procedure to repair it was developed here by Dr. William Boucher during the sixties." According to Dr. Donawick this used to be a highly specialized surgery performed only at veterinary teaching hospitals. "Today it is done at large animal clinics everywhere. Our graduates learned it here and have taken it into the field, to the farmers, eliminating the need to bring the animal here. We now have to look for more complex cases as those which formerly were considered difficult have become routine to those who graduated from here. We have taught them well." Dr. Donawick stated that it is hard for the School to stay ahead of the practitioners. "We develop a technique, then we go out and talk about it; we teach our students and in a short time it is incorporated into the repertoire of practitioners. We are then no longer

In one of the operating rooms at New Bolton Center the surgeon climbs out of a pit built into the floor to make it easier to operate on cattle which need abdominal surgery. The cow is untied and quickly gets up on her feet shaking her head. The surgeon examines the incision and the animal is bandaged. A few minutes later it is led to a stall in the barn. This scene would have been unthinkable twenty years ago, yet today it is a common one at New Bolton Center where between 550 and 600 cattle surgeries are performed annually.

"Things have changed," explained Dr. William J. Donawick, Mark Whittier and Lila Griswold Allam Professor of Surgery at the School of Veterinary Medicine. "When I went to school little cattle surgery was taught. We learned how to take out an eye, how to do a rumenotomy and how to remove a claw, that was the extent of the surgical training."

Today veterinary surgeons routinely repair complex disorders and help cattle survive. "What has happened during the last fifteen years is that a body of knowledge has developed," said Dr. Donawick. "Surgical techniques were studied in other animals and then applied to cattle in search for economically feasible and practical solutions. There are now about fifty individuals nationwide who teach bovine surgery and who search for new techniques." This development was fueled partly by the increase in value of dairy cattle. "Today the average dairy cow is worth about \$1,500 and exceptional producers can be worth as much as one million dollars," said Eric Tulleners, D.V.M., assistant professor of surgery. "If we can get an animal well for a few hundred dollars, the

dairyman is ahead because if he sold the cow for salvage he would realize only about \$500 to \$700 and incur a loss."

Surgeons at New Bolton Center tackle many difficult problems. "We often get the complex cases here," said Dr. Donawick. Cases range from routine abomasal displacement to complicated orthopedic repairs. Patients include dairy cattle, many of them high producers, and newborn calves requiring surgery for congenital problems.



unique and must progress to find solutions to other more complex problems."

This constant pressure for economical and practical solutions has led to many advances in bovine surgery. Dr. Donawick developed and perfected a technique to treat abomasal fistula, a condition which sometimes occurs after surgery to correct abomasal displacement. The cow develops an infection in the incision, the wound breaks open, and the abomasum shifts its position in the body cavity. This infection is localized, but it is a serious condition and has to be repaired. Dr. Donawick removes the diseased tissues and repairs the abomasum and returns it to its proper place. "It's a big, messy job, but we can repair the damage and heal the cow; she recovers and remains a milk producer." He explained that he has taught the technique to many practitioners and that it is now used at a number of large animal clinics.

Other surgeries performed at New Bolton Center include Caesarian sections for cows which have calving problems. Some of these cases may be relatively simple, others, where the calf has been dead for a number of days, can be complicated procedures. "We get many of the almost hopeless cases," explained Dr. Tulleners. "This has forced us to look for new ways to save the cow and return her to productivity."

Stomachs or reproductive organs are not the only surgical problems tackled by the team. Dr. Donawick and Dr. Tulleners are developing new techniques to repair damaged teats in dairy cows. "It's a common problem," said Dr. Tulleners. "A cow steps on her teat and damages it. The injury causes scar tissue to develop and this interferes with milk flow." The surgeons repair the teat by inserting a small tube above the sphincter of the teat. This allows the flow of milk and helps to heal the tissue. "It is very tedious, reconstructive surgery, but it works and it can return the cow to productivity." Dr. Donawick felt that this technique also will some become the common property of practitioners. "I have already heard of some trying it with success," he added.

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Cattle can have orthopedic problems. "They can dislocate their hips," said Dr. Tulleners. "This is a serious problem because they cannot get up." He has repaired a number of such hips with Dr. David Nunamaker, professor of orthopedic surgery at New Bolton Center. "The ligament and joint capsule which hold the ball and socket joint together are torn," he explained. "We remove the damaged tissue, clean out the joint and replace the femoral head into the socket. Eventually the body forms fibrous tissue which stabilizes the joint." Dr. Tulleners continued by saying that footing for these patients is critical. "We place them in a stall bedded with sand so they have excellent traction. Cows make good orthopedic patients, they are very careful and deliberate, they rarely do anything hastily." He is also studying stifle repairs, another common orthopedic prob-

lems in cattle and he feels that many of these injuries can also be successfully repaired.

"Our role here is to train veterinarians to take surgery to dairy cattle," said Dr. Donawick. "We are doing this well, as witnessed by the proliferation of large animal clinics which undertake more and more complex procedures, forcing us to tackle new frontiers in bovine surgery in the search for practical solutions the dairy farmer can afford."

The case load at New Bolton Center consists of about 90 percent referral cases. "Many of these are very serious," explained Dr. Donawick. "They are often the cases the practitioner cannot handle at his clinic. Here we do have facilities for general anesthesia and intensive care. Practitioners rarely do surgery requiring general anesthesia. Most surgeries are done with local anesthesia." According to Dr. Donawick, general anesthesia for cattle was virtually unheard of ten to fifteen years ago. "Today, with the new drugs, it is no longer a problem."

The two surgeons explained that the cost of surgical treatment at New Bolton Center is not that expensive. "If it gets too costly, the dairy farmer cannot afford it," they said. "We have to keep the cost down and this puts the squeeze on us. We do not really recover all the expenses, such as the wear and tear on the equipment, but then this is a teaching hospital." The mission of teaching, service and research is very much on the minds of the two men as they continually work to find better ways to treat cattle surgically and make this treatment affordable for the farmer. The advances made in bovine surgery during recent years show that this quest for solutions is not an impossible one and that it is an undertaking of economic importance to the cattle industry.

Dr. Tulleners came to New Bolton Center as a resident. He graduated from the University of California at Davis and worked as an intern at the University of Saskatchewan, Canada. He is now assistant professor of surgery and lives with his wife and child near New Bolton Center.

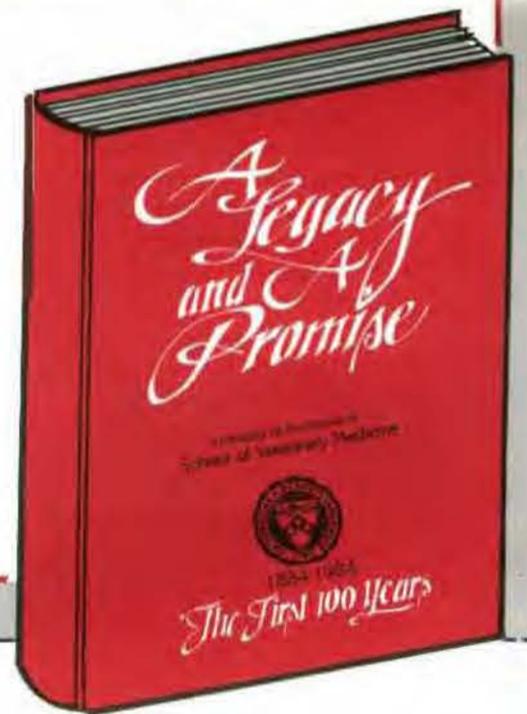
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