

## Lucy's "Thymoma" and How Radiation Treatments Saved Her Life!

**Synopsis:** Information available on rabbits with a chest mass (either thymoma or lymphoma) is limited, and rather scary. We learned that even without a definitive diagnosis, either condition causing the mass is very responsive to radiation treatments. Radiation shrinks the tumor in size to greatly improve quality of life, but doesn't "cure" it. Surgical procedures can remove the mass, but are very invasive. While the treatments are expensive, radiation is non-invasive with very few side effects for rabbits. As with all medical situations, it is crucial to have a rabbit-savvy veterinarian/specialist caring for your bunny. UC Davis is thought to be where exotics like rabbits need to be treated for cases like Lucy's but we were lucky to find experienced and compassionate care for Lucy in the Santa Cruz area. After seeing excellent results from the radiation treatments, we take Lucy in for periodic follow-up examinations and xrays to monitor her condition, and hopefully, the thymoma will not return. We are providing this success story to give hope to other bunny parents, and to let others know of the great resources we were fortunate to find in the Santa Cruz area.

### The beginning of Lucy's story ...

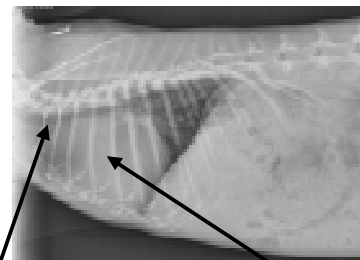


It all started innocently enough – one night, we noticed that white film was covering part of Lucy's eyes on both sides. We weren't able to get an appointment the next day with her regular vet, but took one the day after. By then, her eyes a looked normal, but we thought peace of mind was worth it, and decided to go ahead with the appointment. She's an eight-year old mini-lop who wasn't experiencing any other problems. Good energy, good appetite, and very bonded to her little prince Milton.

### Initial Findings ... what does she have?

Upon initial exam, Lucy seemed to be ok. Our vet said that her third eyelid was exposed, but everything else seemed good. But before we left, she wanted to consult with another rabbit-savvy vet at the clinic. She came back and said that sometimes a chest mass could cause the third eyelid to be exposed, and wanted to take an xray to rule that out. We said ok, thinking that it would come back fine, and just continue to give us peace of mind. So we were very surprised when she came back and said that there was indeed something in her chest ...

She took me back to see the xray, and Darrell stayed with Lucy and Milton. First, she showed me an xray of a dog, pointing out the clear definition of heart and lungs. Then she showed me Lucy's xray – and even I could tell the difference. The mass had pushed the trachea up close to her spine, and that was causing the third eyelid exposure. She said that the mass could either be a thymoma (a benign tumor) or lymphoma. Of course, neither sounded good to us. She suggested that we have an ultrasound guided aspirate to try and determine what the mass really was, but said that the aspirate was all their clinic could do – any follow-on treatment would need to be done by a specialist. We knew that many veterinary practices do not deal with rabbits, so we were not surprised when she said that we might need to go to UC Davis for further diagnostics and treatment (about 2 hours away). She suggested that we shouldn't wait too long before deciding what to do.



Trachea is the dark line – pushed up against spine by the large chest mass

## Uh-oh ... now what?

So we started to research the internet and find out everything we could about thymoma in rabbits. We found it was really hard to find good information about treatments, survival rate, etc. Initially it was very scary because of the lack of information. What we did learn is<sup>9</sup>:

- The thymus is a small organ in the chest that produces immune systems cells. A type of cancer, thymoma occurs when cells on this organ begin to grow uncontrollably, forming tumors
- Thymoma occurs in approximately 8 percent of all rabbits
- Thymoma in a rabbit may cause shortness of breath, causing the animal to pant or breathe with its mouth open. The rabbit's eyes may bulge or a swelling may develop around its head, neck or legs.
- The vet may take a sample of fluid from the tumor using a needle or remove a small part of the growth to determine that the tumor is cancerous. While the ultrasound-guided aspirate (fluid sample via needle) does not always provide a conclusive diagnosis, it is much less invasive than a biopsy that removes a small part of the growth.
- Approximately 50 percent of rabbits survive surgical removal of the thymoma, and those that do often recover fully from the disease. Approximately 80 percent of rabbits survive radiation for thymoma, but there is a higher risk that the disease will return with this method of treatment.

We also enlisted the help of our friend and director of The Rabbit Haven, Heather Bechtel. She emailed several rabbit-savvy vets about Lucy's condition, and posted to several rabbit resource sites seeking information on our behalf. While some of the information we found was encouraging, there was a lot of discouraging information as well. But at least we were becoming more aware of the alternatives and the route we wanted Lucy to take. As bunny parents, we didn't want to subject Lucy to long car rides, extensive surgery, or the trials of re-bonding with Milton if something caused them to start to fight with each other (it had happened before when she had taken medicines for something else and "smelled funny"). Because she didn't seem to show any major signs of distress or discomfort, we wanted her treatments to be as minimally invasive as possible. But we also wanted her to live a long life with us (she's only 55-60 in human years), and wanted to do what we could to make sure that would happen. We called local animal hospitals that provided oncology services, but were told they only treated cats and dogs. And then finally, Heather received a referral to Santa Cruz Veterinary Hospital – only about 35 miles away (but "over the hill").

We called for an appointment, but found that the oncology specialist was on vacation. By now, we were starting to worry more about Lucy's condition – her third eyelid was becoming more and more prominent, and she had started to have some wheezing noises when she lay with her head completely flat in front of her. The staff said they would email Lucy's xray to the vet while he was in Lake Tahoe, and that we might hear back from him. Sure enough, he called and

said that he reviewed the xray, agreed that it could be either lymphoma or thymoma, but either was responsive to radiation treatments. He scheduled Lucy for a 5pm appointment on the first day he got back from vacation. At first, we were happy that he called back and wanted to see her so soon ... then we began to wonder if that meant the situation was more critical than we thought. But through the course of the consultation and subsequent radiation appointments, we learned that Dr. Jay Stone is just a very good veterinarian that genuinely cares about the animals he sees and treats.



### **Let's get some real answers!**

Heather went to the initial consultation appointment with Lucy and me (Darrell was out-of-town on a business trip). After much internal debate, I decided to leave our other bunny Milton at home, and hoped that they would still stay bonded. Dr. Stone first examined Lucy, and then we talked about her xray and his physical exam. I had plenty of questions, and Dr. Stone answered them as he discussed his recommended course of treatment, if we decided to proceed. First would be an ultrasound-guided aspirate and try to determine if the mass was thymoma or lymphoma. He would treat thymoma with 8 radiation treatments; lymphoma requires more aggressive treatments, probably 12, done 3 times per week. Lucy would receive anesthesia with each treatment, but it would be gas only, not injected so that she would be immobilized. Fur is shaved so they can mark her treatment area. The radiation would be done on both sides to get the maximum dose in the middle. He said that rabbits are typically ok after treatments - normal energy and appetite. She shouldn't experience any pain or need any medications during the treatment period. She would be able to eat normally before treatments (unlike cats and dogs that have to have food withheld before anesthesia). About two weeks after the last radiation treatment, an xray would be taken, and then periodic xrays would continue to monitor whether or not the mass returned. He didn't think the mass was a cyst, since her chest was not compressible. Without treatment, the mass would eventually press on her heart and air pipe making breathing more difficult, and fluid would start being produced. This could happen in 4-6 months. Dr. Stone spoke in a way that I understood everything he said, and felt very comfortable asking questions. In just one hour, I felt like we had gone from guessing about what could be done to a real course of action with a high probability of success. I felt Dr. Stone would do the right things for Lucy. I signed the paperwork and scheduled the aspiration appointment for the following morning, Thursday.

The ultrasound showed that the mass was homogeneous and large, definitely not a cyst. She was given a little isoflurane gas for the aspiration, but came out of it fine. When we got home, Milton greeted her, but then got more interested in eating the bag of hay in her carrier. She decided to join him in that, and soon they were playfully fighting over the hay bag. Then came the waiting for cytology results, which came back the next day (Friday). The results were inconclusive as to whether it was thymoma or lymphoma (which we knew could be a possibility), but Dr. Stone was banking on it being thymoma. While a biopsy could provide a definitive diagnosis, he did not feel this would be in Lucy's best interest (words that we were very happy to hear, since we had previously decided that we didn't want to subject her to an invasive surgical procedure, even if radiation didn't "cure" the tumor). However, he wanted to be slightly more aggressive in his treatment plan, and would do 9 treatments instead of 8. The initial two treatments would be higher doses to jump start the process, then he would back down. Because the mass had some wing-like projections sticking out around Lucy's heart, the front part of her heart would receive some exposure to the radiation. This should not cause irreversible damage, and he stated this with 75% certainty. The radiation would be done on both the right and left side, around 6 minutes total duration. The first treatment would require a longer anesthesia period while they position and mark her. I asked about the risk of multiple anesthesia episodes, and he said that it would actually be easier in the later treatments, since there would be more area around the lungs when the mass started to shrink. Treatments would begin the following week on Wednesday. Dr. Stone assured me that Lucy would be ok until then.

### **Treatment begins ...**

**Day 1 (Wed):** Lucy ate her normal breakfast of greens and hay, and then we drove over the hill for her first treatment. By now, her third eyelid was covering between 1/3 and 1/2 of her eye, and it seemed that she was having more trouble breathing, so we were very anxious to get the radiation started. We said goodbye to Milton, and that we would be back in a few hours for him to welcome

her home. Once Lucy was checked in, Darcy prepared her treatment schedule and we went over what would be happening. She then took Lucy back to the radiation building, and I waited ... and waited ... it seemed like a long time. Finally, she came out to tell me that Lucy was ok! She was waking up (after being under for about an hour), and that she did very well. They gave her a little piece of apple, which she ate – a good sign! Once she was fully awake and ready to go, we went home. When we got in the house, she got out of the carrier, and immediately went into their bunny bungalow,



seemingly to hide. Milton cautiously approached her, but didn't stick around too long, as I think he sensed that she wanted to be alone. I tried to coax her out with some greens, but she wasn't interested (so Milton ate most of it). She seemed pretty withdrawn for quite a while, but finally came out and ate a little bit. Her energy was only on the moderate side, and she went back to sleeping in a protected area. The way she acted reminded me very much of how my mother acted after her first radiation treatment. She didn't have any pain or discomfort, but she just wanted to sleep. I didn't think it

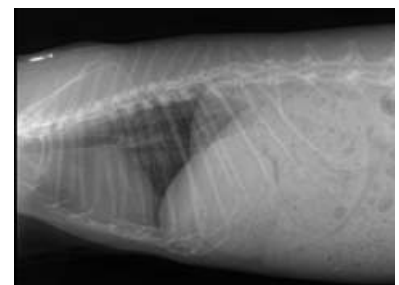
was a side effect from the treatments, but more that she just didn't want to deal with it or think about it. Mom was much better after the remaining treatments, and I hoped Lucy would be too. Darcy called on Thursday to see how Lucy was doing, and asked about Milton, too.

**Day 2 (Fri):** It seemed already that Lucy's eyelid was less pronounced, and her energy level and appetite had recovered to normal. When Dr. Stone examined her, he said that he was "cautiously optimistic" that the radiation was already helping. He said there is some limited compression now, and that her heart sounds better - there is some part of the heartbeat that sounds stronger and like it is coming from the right place now - it was previously further back in her body because of the mass was pressing into her heart. Her treatment went fine. Over the weekend, she showed great energy, and hopped all though the house for the first time since she began radiation. This was our bunny girl!



**Day 3 (Mon):** Lucy had a small tuft of fur growing back already! She had lost 1-2 ounces, but Dr. Dembner (Dr. Stone has Monday's off) was not concerned about that. The treatment went fine, and Lucy ate hay and greens when we got home – she hadn't done that previously, so I felt maybe she was getting more adjusted to this new routine. We're now 1/3 of the way done. She went back to doing binkies and flopping ... behaviors we had missed for awhile.

**Day 4 (Wed):** The day went GREAT! They took 4 xrays before she started treatment, and it shows much improvement already. The mass is less dense and has been reduced by about 35% in size. Her heart sounds much better, and chest is more compressible. Her trachea is not pushed up so high anymore either. Things are progressing as expected. Because of the success so far, Dr. Stone changed the plane of radiation today so it is not so close to her heart. I asked if he could tell if it was lymphoma or thymoma now, based on the results, but he said that both would respond the same way to the radiation. So she still has to go through the full treatment plan to get the total dosage. I also asked if the fact that there is no evidence of it spreading and affecting other organs was an indication, but he said no, that there are lymphomas that essentially stay in one place. He seemed genuinely



**Trachea now lower;  
heart more clearly defined**

pleased with the results, and was full of smiles. Lucy was very happy to get home - ran to eat hay out of the rack and then played in the hay bag with Milton. They took turns flinging the bag around.



**Day 5 (Fri):** We are now past the half-way point. Everything continues to go as Dr. Stone expected. He said it was good that we were able to find out about this and do something before any fluids got into her system, as then the treatment and prognosis becomes more difficult then.

**Day 6 (Mon)** - 6 down, only 3 to go. This is getting to be routine for Lucy and us, including Milton. She recovers quickly now – and this time, was willing to eat hay in the car coming back home.

**Day 7 (Wed)** - Everything is still going just fine. Dr. Stone continues to be pleased with how Lucy is doing, and I am pleased that she seems adjusted to the whole process and is happy with Milton when she gets home. He said today that she was the "perkiest" that he's seen her - probably because she was trying to get away before he picked her up off the floor for his exam.

**Day 8 (Fri)** - We finished in record time today (we were first to go today), and she was happy to eat the carrot tops they gave her on the way out.

**Day 9 (Mon)** – Lucy's last treatment was today. She did just great! They gave us a framed certificate that everyone signed with little notes on it, and tied ribbons on her carrier. It was really nice.



Her follow-up visit will be 11 days later on April 9th. Dr. Stone wanted that day so Lucy can have an ultrasound done by the same person that did it the first time. His original discussions indicate that they just do xrays, but having an ultrasound will be more conclusive, since they can get very exact measurements that way. Hurray ... the tough part is over!

### **Follow-Up Visits are reassuring ...**

As of this writing, it's been around 3 months after Lucy's last treatment. We've had 3 follow-up visits so far; the first was nearly 2 weeks after the last treatment, then two more at 6-week intervals. Each provides very encouraging news – that Lucy is doing really well, and there are no signs of any recurrence. The 4 key indicators that Dr. Stone can assess with a physical exam are her steady



weight, no issues with the 3<sup>rd</sup> eyelid becoming visible again, compressible chest, and good heartsounds. The ultrasound and follow-up xrays provide more visible confirmation that the mass has indeed shrunk and her trachea is now properly positioned and her internal organs appear normal. We'll continue to return every few months for continued follow-ups, but continue to be greatly encouraged that this treatment plan saved Lucy's life. We know there is a possibility that the tumor could return, but it is possible to re-treat with radiation. We hope that we won't have to face that situation, but wouldn't hesitate to go through it again, if Lucy is willing.

Right now, Lucy just continues to wonder what all the fuss has been about, but continues to thank us in her own bunny-way for taking such good care of her!

## **Additional References about Rabbit Thymoma and Lymphoma**

### **Resources found on The House Rabbit Society website, [www.rabbit.org](http://www.rabbit.org)**

1. Therapeutic Options for Thymoma in the Rabbit – James K. Morrissey, DVM, Dip. ABVP (Avian Practice) and Margaret McEntee, CMV, Dip. ACVIM, ACVR (RO)  
<http://www.rabbit.org/health/Rabbitthymomas.pdf>
2. A Miracle for Hopnoodle by Davida Kobler  
<http://www.rabbit.org/health/thymomastory.html>

### **Resources found on Virginia Rabbit Inc website, [www.varabbit.com](http://www.varabbit.com)**

3. Dust Bunny's Journey With Thymoma  
<http://www.varabbit.com/dusty.html>
4. Pippa's Story  
<http://www.varabbit.com/pippa.html>
5. Marlo's Thymoma Story  
<http://www.varabbit.com/marlo.html>

### **Resources found on the Santa Cruz Veterinary Hospital website, [www.santacruzveterinaryhospital.com](http://www.santacruzveterinaryhospital.com)**

6. Radiation Therapy (note: some of the information in this article does not apply to rabbits (e.g., “Do not feed your pet after midnight the night before treatment day. Your pet must have an empty stomach in order to be safely anesthetized.” – This is not an issue for rabbits; they can eat the morning of their treatment. The staff will discuss rabbit-specifics with you during an initial consultation)  
<http://www.santacruzveterinaryhospital.com/pdfs/radtherinfo.pdf>
7. Oncology and Oncology Appointments at SCVH  
<http://www.santacruzveterinaryhospital.com/referral/oncology.html>

### **Other articles:**

8. Thymoma in Rabbits – Phyllis O'Beollain  
<http://www.examiner.com/x-7748-Dayton-Small-Pets-Examiner~y2010m1d10-Thymomas-in-rabbits>
9. Thymoma in Rabbits (fact sheet) – Hayley Harrison  
[http://www.ehow.com/facts\\_6183205\\_thymoma-rabbits.html](http://www.ehow.com/facts_6183205_thymoma-rabbits.html)