

Bone Marrow Timeline and Results

A bone marrow biopsy is a procedure done to remove a small amount of marrow from your bone. Bone marrow is the soft, spongy, tissue inside of your larger bones. Bone marrow makes blood cells called platelets (Plts), red blood cells (RBCs) and white blood cells (WBCs). Platelets help your blood to clot. RBCs carry oxygen to your tissues, and WBCs help our body to fight infection. During the biopsy, the use of a needle and syringe is used to draw marrow out of your bone. The bone marrow is usually taken from the hipbone. Your bone marrow is sent to a lab for tests.

Reference-www.thomsonhc.com *Inclusion of this website does not imply endorsement*

May 27, 2009

Dr. Jiang did the bone marrow aspiration and biopsy at Whidbey General Hospital. Dr. Jiang asked if he could send extra bone marrow for research to the Fred Hutchinson Cancer Foundation. He also discussed possibilities for Stephanie's low blood counts, for example, aplastic anemia, leukemia, medicines, or environmental issues. He explained red blood cells are given through transfusions, white blood cells given as injection, and platelets can be given, too. Note: if the letters LP are on blood work results that area is low and is a critical value which means you need to contact the doctor.

Analysis/Conclusions: Bone marrow aspiration and biopsy revealed acute leukemia with chromosome 15/17 translocation.

June 23, 2009

The next bone marrow aspiration and biopsy was done at Everett Providence Hospital while Stephanie was in the hospital for the induction therapy.

Analysis/Conclusions: Complete remission.

October 21, 2009

Dr. Jiang did the bone marrow aspiration and biopsy at Whidbey General Hospital.

Analysis/Conclusions: Results show complete molecular remission (CMR). PCR-a sensitive test that can detect remaining cancer cells which was sent to U of W shows zero cancer cells out of a million cells.

January 8, 2010

Procedure: Dr. Al Masangkay, pathologist, shared that Steph is in molecular remission. Usually aspirate first but did bone marrow biopsy first and then aspirated. Lisa gave 1 ml of Ativan around 10:45 and followed with 1 ml more. The procedure started around 11:00-11:40. Steph was lying on her left side and the biopsy was done on the left side. She usually is lying on her stomach, but not this time. Lisa asked Steph about her pain level. Steph stated 7 out of 10 at least four times during the procedure and this is even with Ativan in her. Lisa gave her 2 liters of oxygen with 99% oxygen saturation levels. Around 12:30, Stephanie's oxygen saturation levels were 97% after she had slept for a while. Then Lisa did a blood draw from port at this time.

Bone Marrow Biopsy Information: Aspiration use local anesthetic and then add lidocane. Then aspirate fluid from the bone marrow. Karyo typing is growing the bone marrow cells, stop the growing, break the cell membrane and take a picture of each individual chromosome. They look at the nuclei and spread the chromosomes out to identify and look at chromosomes 1-23. The panel of flow cytometry tests normal and abnormal bone marrow cells. This is RTPC and sent off to U of W.

The bone marrow biopsy is sent to Northwest Lab in Bellingham.

Analysis/Conclusions: Right posterior iliac crest, bone marrow biopsy, aspirate and clot: A. Normocellular bone marrow with maturing trilineage hematopoiesis. B. Negative for atypical myeloid and lymphoid infiltrates. C. Increased iron stores by iron stain. D. Flow cytometry (U of W Medical Center): NO abnormal myeloid blast, monocyte or maturing myeloid population identified. E. t(15;17) by RT-PCR (University of Washington Medical Center): Pending Dr. Jiang says there is no leukemia.

Dr. Jiang shared the Pathology report showed four out of twenty cells were examined had a translocation between the long arm of chromosome 6 and the short arm of chromosome 12. The presence of this abnormality in several cells indicates clonal growth.

ISCN diagnosis: 46,XX t(6;12)(q13;p11.2) [4]/46,XX[16]

The treatment is still the same and every three months Stephanie will have a bone marrow biopsy. Dr. Jiang did a literature search and could not find any information on these chromosomes.

Future Bone Marrow Biopsies: Every three months there will be a bone marrow biopsy; the next one is April 2010 and then July 2010. Then one every six months depends on the results.

April 21, 2010

Vitals:

9:30- BP 135/79 36.7 temp. 66 Pulse

11:30- BP 115/64 100 oxygen sats. 53 pulse

11:50- BP 108/61 100 oxygen sats.

Procedure: This bone marrow aspiration and biopsy procedure was done at Pacific Campus of Providence Hospital in Everett. Stephanie and Mary arrived around 9:00 to check in on the second floor to an unhappy, non-responsive receptionist. Waited in the hallway and a blood technician came and had Steph go to another room to draw her blood. Already in the room was one woman sitting in one of the three reclining chairs who was going to have a seven-hour blood transfusion. The technician had orders to draw blood from Steph's arm and not her port. After checking her veins, she drew blood from her right arm. From there Steph was taken to a single room with a shared bathroom and a bed. Another young technician checked Steph's vitals. Then, she noticed Steph had a can of lemon/lime seltzer in her hand and asked her what she had to eat or drink since midnight. Steph shared that she had an early breakfast, some coffee, and part of this can of seltzer and no one from the hospital told her not to. Now, in comes Linda, the nurse, who asks Steph to tell her amounts of what she ate and drank and then she called the doctor to get his opinion. The normal procedure at this hospital is to have the patient asleep for the bone marrow biopsy and have nothing by mouth after midnight. Steph said she does not want to be asleep. Linda received the okay from the doctor for the use of a local. Steph put on the hospital gown.

After what seemed like a delay, a man from transport came to deliver Steph to the radiology department. Dr. Quraishi, a radiologist, met Steph in the hallway. She shared she would rather have his job today than have this procedure. She asked him if he had this biopsy. He said he had his appendix removed and never had this procedure. I still can be a good doctor without having these procedures he said. Later on Steph mentioned that some group is causing Dr. Quraishi to respond this way. He then explained the upcoming biopsy. He does one or two biopsies daily. A pathology technician will take some of the spicules, the little, tiny fragments of bone marrow, and place them on slides. He mentioned that he will aspirate first and if need be move the needle and if that doesn't work he will collect two core samples. Steph asked what he thought about having bone marrow biopsies when her results show no cancer. He mentioned that because the bone marrow is suppressed is why this biopsy is done. It could be from the chemotherapy, leukemia, or other reasons. Where did he get this? Steph asked him if he ever received the results after doing a bone marrow biopsy. He said no that would be like having an extra piece of paper and it is not his area of medicine.

Steph was rolled into a large room, which had a rolling x-ray machine with a screen above a blanket-covered table. Before transferring Steph to the table, she asked Mary to stay. Dr. Quraishi stated it is okay for a child or someone who is incapable of understanding to have someone stay. Could Steph do this procedure without Mary there he asked? He went on to explain that there are studies where it shows when family and friends are in the room there are problems because it is not the standard. Steph listened to his explanation and then said, "You

three know each other, referring to John, the x-ray technician, and Gloria, the nurse, and Dr. Quraishi but you just met me. I know her looking over at Mary and I want her here.” Mary went into a glassed room so if Steph needed anything she was close by.

John and Gloria helped transfer Steph onto the table and had her lie on her stomach. Dr. Quraishi started the procedure placing the x-ray machine over Steph’s left hip area. He mentioned that something cold will touch you and used a metal ruler to measure the biopsy area. He used a black marker and marked the spot to insert the needle and syringe. He placed orange disinfected on the area; gave two numbing shots, and then proceeded to use the needle and syringe to aspirate and do the biopsy. Once he pulled out the first sample, he handed it off to the pathology technician who placed it on the slides and said yes it is okay. Meaning there were spicules. John and Dr. Quraishi talked with Steph.

When done Scotty came to transport Steph back up to the second floor. Linda, the nurse, checked Steph’s vitals, gave her two 325 mg. Tylenol, and explained her discharge papers. When heading for the parking garage, John, the x-ray technician, saw Steph and asked her if she was going out to have some ice cream. They discussed his use of humor, his job, the patients he worked with, chemotherapy, and his fiancé’s health issues along with their July 2011 wedding.

Analysis/Conclusions: The specimen tested negative for PML/RARA fusion transcripts, which are the molecular result of the t (15; 17) translocation, associated with the majority of APL cases, a distinct AML subset with M3 cytomorphology.

February 2, 2011
Seattle Cancer Care Alliance

Stephanie had a blood draw at 10:15, which was done by Yulia Valerivina (her middle name) who is originally from Ukraine. First Yulia gave a shot of Lidocaine for numbing into port. Next, cleaned the site. Then, 1, 2, 3 breath and drew 5cc of blood from port. Finally, flushed the port. Yulia shared about coming to the United States when she was in second grade and the teacher had her sit next to another girl from the Ukraine. This idea backfired because the other girl was mean to Yulia and of course, the teacher never knew. Steph shared how she never did that. Instead, she had students matched up based upon similar needs not language. Yulia shared she wants to finish her schooling to be a nurse.

Vitals:	11:31	121/68 BP	62-63 Pulse	99% oxygen saturation
	12:05	102/58 BP	69 Pulse	98-99% oxygen saturation
	1:05	107/62 BP	69 Pulse	99% oxygen saturation

We went to the second floor for the bone marrow biopsy. Julie Knight, RN was the nurse who did the procedure. 11:30 Julie gave Steph 1mg. of Ativan to relax and then at 11:50 gave 200 mg. of the narcotic Fentanyl which should dull the pain by sending the message to the receptors of the brain. When rubbed in checks Fentanyl works faster through the tissues verses if swallowed takes time to go through the GI track. Lidocaine was given as a shot into the skin at the bone marrow aspiration site.

Steph was on her right side on this narrow table for this procedure. We shared that Steph does better on her stomach. However, Julie explained she prefers to have the patient on their side so she can get easier access to the hipbone. First Julie marked the posterior iliac crest (posterior iliac crest is a readily accessible site for bone marrow aspiration which is safe, psychologically less traumatic, and affords representative samples of bone marrow similar to those obtained from the sternum, the vertebral spine and the anterior iliac crest) with a black marker and felt around her hip area. Julie went to aspirate, did not get the correct area, and had to withdraw and reinsert the needle. Steph's left leg began to hurt. The pain level was around an eight or higher. Finally, Julie was able to remove 5cc of bone marrow, which is about a teaspoon. Gary, the lab technician, prepared the slides.

Steph was in pain and Julie explained she grazed a nerve when inserting the needle. Julie had to call the doctor and got permission to give her 650 mg of Tylenol. Steph said after a while the pain was between 5 and 6. Julie went over the check out procedures. Steph got up and walked around before leaving.

We had lunch at Chinooks in Ballard and ate eighteen smooth tasting Kumamoto oysters, fish tacos, and mile high chocolate cake with two skinny candles propped in the frosting to celebrate. Rebecca Wentworth, "Becky" was a great waitperson who has worked there for six years.

Analysis/Conclusions: Apparently, normocellular marrow with maturing trilineage hematopoiesis and no diagnostic morphologic or flow cytometric evidence of involvement by patient's previously diagnosed acute promyelocytic leukemia. Macrocytic anemia and thrombocytopenia.