ASCLS TODAY

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Did That Really Just Happen In Our Blood Bank? A Case of Hemolytic Wright A Exposure

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It seemed like another routine day of testing in the blood bank when an elderly female patient presented to the emergency center (EC) with complaints of lightheadedness and generalized weakness. In a prior visit to the EC, the patient had been diagnosed with primary biliary cirrhosis and was recently seen at a physician's office for dark tarry stools and a suspected gastrointestinal bleed. The patient was admitted to the hospital and several laboratory tests were ordered including a hemoglobin and hematocrit, troponin, basic metabolic panel, and a ferritin. The patient was exhibiting clinical symptoms of anemia; her hemoglobin was 6.1 g/dl and a type, screen, and crossmatch were subsequently ordered.

The patient was tested in gel using instrumentation and the sample's ABORh was found to be A positive with a negative antibody screen. The antibody screen results and antigram can be seen on the chart on page 4.

The patient had a historical ABORh from the previous EC visit and no previous or current record of antibodies in the blood bank. Following our standard operating procedures, the patient was eligible for electronic crossmatch and 4 units of red cells were electronically crossmatched and placed in the refrigerator.

During the course of the patient's hospital admission on the gastroenterology floor, 4 units of A positive red blood cells were transfused over a period of 3 days. Three hours into the transfusion of the 4th red cell unit, the patient developed an increase in temperature from 35.3°C to 37.8°C, chills, a decrease in blood pressure from 153/85 to 118/62, and nausea. No other vital signs showed significant changes; no dyspnea,

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STUDENTPERCH STEM & HEALTH SCIENCES VIRTUAL COLLEGE & CAREER FAIR ASCLS-NJ EXPERIENCE

Cynthia Dixey – President, ASCLS-NJ

On October 23, 2014 ASCLS-NJ participated in the StudentPerch STEM & Health Sciences Virtual College & Career Fair. The goal was to "stretch our voices" outside of the lab, and "talk" to students across the country about the Medical Laboratory Science profession. StudentPerch is a Social Good company that provides an interactive, exclusively online platform to help K-12 students, college students, and professionals explore their higher education and career options. StudentPerch connects students and individuals with recruiting, educational, and exhibiting organizations every month in fields such as STEM, health sciences, international affairs, and business.

ASCLS-NJ members first interacted with Chanette Porter-Clinton, the Founder and CEO of Student-Perch, at the 3rd Annual USA Science and Engineering Event held in Washington D.C in April 2014. At this event ASCLS was hosting a booth, "Solving Medical Mysteries." One of the interesting facts brought to light at this event was that college bound high school students and parents were not even aware of the MLS profession. Once they learned of the MLS profession through one-on-one interaction with MLS at the event,

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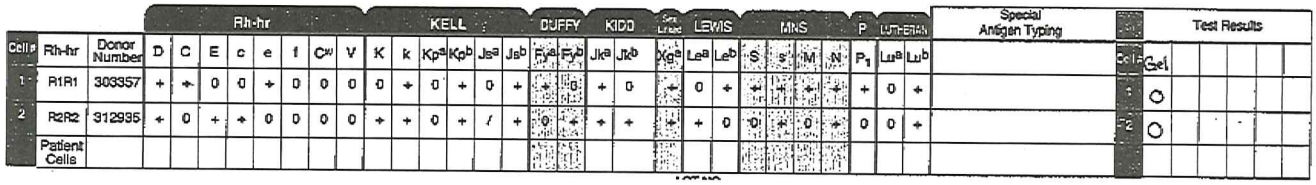
Today's Agenda

Blood Bank From Page 1

pain, or rash was found. The transfusion was immediately stopped, however approximately 330 mL of the unit had been transfused.

Antibody screen results and antigram



Cell #	Rh-hr	Donor Number	Rh-hr								KELL					DUFFY		KIDD		Xg	LEWIS		MNS				P	LUTHERAN		Special Antigen Typing	Test Results	
			D	C	E	c	e	f	Cw	V	K	k	Kp^a	Kp^b	Js^a	Js^b	Fy^a	Fy^b	Jk^a	Jk^b	Xg^a	Le^a	Le^b	S	s	M	N	P_1	Lu^a	Lu^b		Cell	Gel
1	R1R1	303357	+	+	0	0	+	0	0	0	0	+	0	+	0	+	+	0	+	0	+	0	+	+	+	+	+	+	0	+		1	0
2	R2R2	312935	+	0	+	+	0	0	0	0	+	+	0	+	/	+	0	+	+	+	+	+	0	0	+	0	+	0	0	+		2	0
	Patient Cells																															

A blood bank medical laboratory scientist was called and a transfusion reaction evaluation was initiated. A post transfusion sample was drawn for testing, the vital signs and unit paperwork was returned to the blood bank, and the remainder of the red cell unit was sent to microbiology for culture. The blood bank work up showed no clerical errors, however the post-transfusion sample was grossly hemolyzed. The comparison of the pre and post transfusion samples can be seen below.

	Pre	Post
Clerical Check	Pass	Pas
Hemolysis Check	None	Gross
Icteric Check	Neg	Pos
ABORh	A pos	A pos
Antibody Screen	Neg	Neg
DAT	Neg	Neg
Patient Autocontrol	0	0

Since the patient had been crossmatched electronically, the unit segments were pulled from the storage refrigerator and the crossmatches were now run serologically in gel with the pre and post transfusion samples.

	Pre	Post
RBC Unit #1	**0**	**0**
RBC Unit #2	**0**	**0**
RBC Unit #3	**0**	**0**
RBC Unit #4*	**4+**	**3+**

* The DAT for this unit was run in gel and found to be negative.

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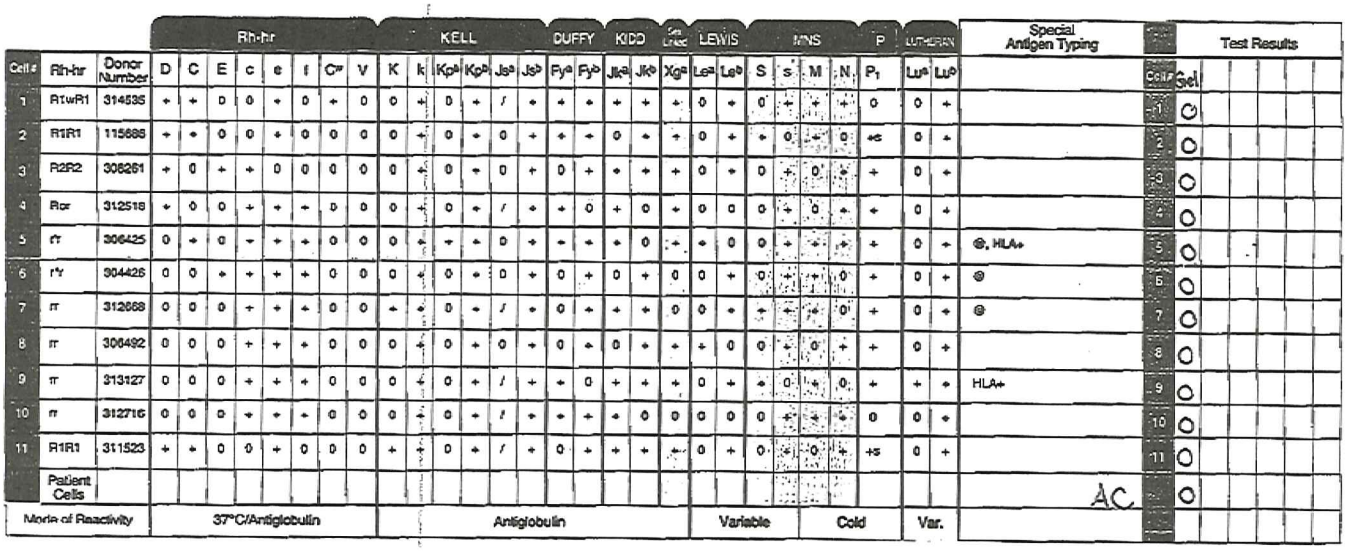
Blood Bank From Page 4

A panel was run on the post transfusion sample and the results can be seen below:



			Rh-hr								KELL						DUFFY		KIDD		Cis Linac	LEWIS		MNS				P	LUTHERAN		Special Antigen Typing	Test Results	
Cell #	Rh-hr	Donor Number	D	C	E	c	e	f	Cw	V	K	k	Kp^a	Kp^b	Js^a	Js^b	Fy^a	Fy^b	Jk^a	Jk^b	Xg^a	Le^a	Le^b	S	s	M	N	P_1	Lu^a	Lu^b		Cell	Sel
1	R1wR1	314535	+	+	0	0	+	0	+	0	0	+	0	+	/	+	+	+	+	+	+	0	+	0	+	+	+	0	0	+		-1	
2	R1R1	115688	+	+	0	0	+	0	0	0	0	+	0	+	0	+	+	+	0	+	+	0	+	+	0	+	0	+s	0	+		-2	
3	R2R2	306261	+	0	+	+	0	0	0	0	0	+	0	+	0	+	0	+	+	+	+	0	+	0	+	0	+	+	0	+		-3	
4	Ror	312518	+	0	0	+	+	+	0	0	0	+	0	+	/	+	+	0	+	0	+	0	0	0	+	0	+	+	0	+		-4	
5	rr	306425	0	+	0	+	+	+	0	0	0	+	+	+	0	+	+	+	+	0	+	+	0	0	+	+	+	+	0	+	⊕, HLA+	-5	
6	rr	304425	0	0	+	+	+	+	0	0	0	+	0	+	0	+	0	+	0	+	0	0	+	0	+	+	0	+	0	+	⊕	-6	
7	rr	312668	0	0	0	+	+	+	0	0	+	+	0	+	/	+	0	+	+	+	0	0	+	+	+	+	0	+	0	+	⊕	-7	
8	rr	306492	0	0	0	+	+	+	0	0	0	+	0	+	0	+	0	+	0	+	+	+	0	0	+	0	+	+	0	+		-8	
9	rr	313127	0	0	0	+	+	+	0	0	0	+	0	+	/	+	+	0	+	+	+	0	+	+	0	+	0	+	+	+	HLA+	-9	
10	rr	312716	0	0	0	+	+	+	0	0	0	+	0	+	/	+	+	+	+	0	0	0	0	0	+	+	+	0	0	+		-10	
11	R1R1	311523	+	+	0	0	+	0	0	0	+	+	0	+	/	+	0	+	+	+	+	0	+	0	+	0	+	+s	0	+		-11	
	Patient Cells																														AC		
Mode of Reactivity			37°C/Antiglobulin								Antiglobulin											Variable		Cold				Var.					

A panel was run on the post transfusion sample and the results can be seen below:

Cell	D	C	E	c	e	f	V	Cw	K	k	Kp^a	Kp^b	Js^a	Js^b	Fy^a	Fy^b	Jk^a	Jk^b	Le^a	Le^b	P_1	M	N	S	s	Lu^a	Lu^b	Xg^a	GEL
VRC173 #1	+	+	0	0	+	0	0	+	0	+	0	+	0	+	0	+	0	+	0	+	+	+	+	0	+	0	+	+	0
VRC173 #5	0	+	0	+	+	+	0	0	+	0	0	+	0	+	0	+	0	+	0	0	+	+	+	0	+	0	+	+	0
VRC173 #6	0	0	+	+	+	+	0	0	0	+	0	+	0	+	0	+	+	+	0	+	+	+	0	+	+	+	+	0	0
VRC173 #9	0	0	0	+	+	+	+	0	0	+	0	+	0	+	+	0	+	0	0	+	+	0	+	0	+	0	+	0	0
VRC173 #11	+	+	0	0	+	0	0	0	0	+	+	+	0	+	0	+	+	+	+	0	+	+	0	+	0	0	+	+	0
42950 #10	+	0	0	+	+		0	0	0	+	0	+	0	+	0	+	+	+	0	+	+	0	+	0	0	0	+	+	0
42590 #16	0	0	0	+	+		0	0	0	+	0	+	+	+	0	0	+	+	+	0	0	+	+	0	+	0	+	0	0
																												AC	0

The post transfusion hemolytic testing revealed a haptoglobin of 10, lactate dehydrogenase of 660, and a total bilirubin of 8.1, confirming true hemolysis. Microbiotic culture of RBC unit #4 showed no growth for 5 days post transfusion. The patient's post transfusion sample and a segment of the incompatible unit were sent to a reference laboratory for confirmation of a "hemolytic transfusion reaction due to a suspected antibody to a low frequency antigen."

The reference laboratory performed an acid eluate on the patient's sample and eluted off an anti-Wr^a. Allo anti-Wr^a reacted at the antiglobulin phase of the PEG IgG test. All other clinically significant antibodies to other common red cell antigens were ruled out in the plasma and eluate. A repeat DAT was performed revealing a positive mixed field microscopic DAT at anti-IgG and anti-complement. Unfortunately, the red cell unit segment could not be tested in the reference lab as the ABORh of the donor red cells for the Wra antigen was incompatible with the only anti-Wr^a antisera available.

The Wr^a antigen is a clinically significant antigen in the Diego blood group system present in less than 0.01% of the population.[1] This extremely rare antibody is typically not detected in routine testing due to the fact that the antigen is almost never present on commercially prepared antibody screening red cells. Prior to the advent of the electronic crossmatch, these low incidence incompatibilities most likely would have been caught in the serologic

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President's Message From Page 12

dedication and service to ASCLS. Some of you are here for the first time, and I hope that you are "bitten by the ASCLS bug" as so many of us have been. I also want to thank those of you who have volunteered to work with me this year by serving on a committee. Everyone's time is extremely valuable and I appreciate you all giving ASCLS some of that time. The mentoring program begun by Stephanie Noblit and Sherman Binas will be taking off this year and I want to thank them for the work they have put into the program. It is of vital importance that once we ask someone to participate, we follow up with him/her and provide guidance if needed.

Our Membership Committee has done a fantastic job this past year and we must continue that work. I will paraphrase something that was said at a recent sales meeting I attended: it is much harder to retain a member than to get a new one. If our new members do not feel a part of ASCLS, we will lose them. We must get the new members involved in our local societies, and that doesn't mean asking them to run for President-elect the week after they attend their first meeting! Keeping in touch with those new members is of vital importance to their future.

Accountability: This year, part of the reports from the committee chairs will be participation records. Board liaisons and committee chairs will periodically review the records, and any committee member who is unable to participate will be given the option of stepping aside to give another member the chance to participate. If someone needs to step aside, that's fine—it does not mean you will never be able to work on a committee again. I will respect you more if you reach out before it becomes an issue.

The Board and I are also accountable to you, the membership. If there is any way we can assist or provide guidance to you, please reach out to your Region Director or me. If you have an idea or a project for the society, please let me know as well. You all are part of this society and all input is valuable. I am so excited to see the increased activities of our younger members—I have great hope for the future of our organization. I had to laugh to myself a few months back when a younger member seemed surprised that it took me so long to become President!

Finally, I want to say how much I appreciate all of you—the members of ASCLS, who have inspired me, challenged me, who have supported me and have agreed to work with me through the years. Thank you all and again, thank you for the honor of being President of ASCLS.

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Blood Bank From Page 5

crossmatch., Studies of electronic crossmatching have shown the risk of a random unit of Wr^a positive blood being given to a recipient with an anti-Wr^a is less than 1:50,000 transfusions.[2] Adding to the intrigue of the case, anti-Wr^a immunoglobulins can be IgM or IgG and as such, most transfusion reactions are non-hemolytic, making a true hemolytic reaction a rarity. [3]

After reading the confirmatory report, my first thought was how awful for the patient; the laboratorian in me thought of just how cool it was to actually do the work-up on something I have only read about in textbooks. Our pathologist worked closely with the gastroenterology staff to provide care for the patient and the patient did recover from her GI bleed and transfusion reaction, leaving the hospital many days later.

References:

1. Reid ME, Lomas-Francis C. The Blood Group Antigen Facts Book. 2nd ed. London, UK: Elsevier Academic Press; 2004.

2. Cherian G, Search S, Thomas E, Poole J, Davies SV, Massey E. An acute hemolytic transfusion reaction caused by anti-Wr^a. Transfus Med. 2007;17(4),312–314.

3. Race RR, Sanger R. Blood groups in man. 6th ed. Oxford, UK: Blackwell Scientific; 1975:436.

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STEM From Page 1

they realized this could be a career option for them! StudentPerch expressed an interest in hosting an Open House or chat with ASCLS by state, region, or at a national level.

There are several models of partnership with StudentPerch. One option is to host a Partnering Conference within the StudentPerch Education Pavilion. In this model the partner would solicit support from vendors and job agencies to attract people at various stages of their profession, from MLS/MLT students, to educators, lab supervisors and managers. This option offers a 75/25 sharing of revenue, with the partner receiving 75% and StudentPerch receiving 25%. In considering this option, ASCLS-NJ's goal was to use the revenue earned for student activities, such as support to attend local and national CLS related

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