

ABID CASE #14

Case study by Jim Perkins, M.D. (© 2009)



History: This patient was a 53 year old woman who presented with 3 episodes of exertional chest discomfort pain associated with dyspnea and lightheadedness on the day of admission as well as on the two preceding days. She had multiple risk factors for atherosclerosis including hypertension, hyperlipidemia, and smoking and had undergone right femoral artery atherectomy. She also had a history of GERD and diverticular disease as well as iron deficiency anemia; she was currently taking iron and noted black stools. She had not previously been transfused.

Electrocardiography revealed ST depression in the antero-lateral leads. This and the pain resolved with sublingual nitroglycerine. Her hemoglobin was 7.0 gm/dL. Transfusion of RBCs was ordered urgently.

ABO and Rh Typing

<A	<B	A1 cells	B cells	6% alb	<D	<D/AHG	CCC	Interp
4+	0	0	4+		0	0	2+	

Antibody Screen

	Gel
SCI	0
SCII	0

Direct Antiglobulin Test

	Poly	IgG	<C3
AHG	0		
CCC	2+		

Three urgent crossmatches by the "immediate spin" method were performed with group O, Rh negative RBCs. (Since the patient had a negative antibody screen a crossmatch using the IAT was not required.) The crossmatches were positive. The following tests were initiated urgently:

Initial Panel

Lot #34592		Rh system						Kell						Duffy		Kidd		Lewis		P	MNSs				Lutheran		Xg	Other	Saline/tube		
Cell	Rh	D	C	c	E	e	V	K	k	Kp ^a	Kp ^b	Js ^a	Js ^b	Fy ^a	Fy ^b	JK ^a	JK ^b	Le ^a	Le ^b	PI	M	N	S	s	Lu ^a	Lu ^b	Xg ^a	Typings	Cell	IS	17 ^o
1	R1R1	+	+	0	0	+	0	+	+	0	+	0	+	+	0	+	+	+	0	+	+	0	0	+	0	+	+	Lu:14	1	2+	3+
2	R1wR1	+	+	0	0	+	0	+	+	0	+	0	+	+	+	+	+	+	0	+	+	+	0	+	0	+	0	C ^w	2	2+	3+
3	R2R2	+	0	+	+	0	0	0	+	0	+	0	+	0	+	0	+	0	+	+	+	+	0	+	0	+	+		3	2+	3+
4	Ror	+	0	+	0	+	0	0	+	0	+	0	+	0	0	+	0	0	0	+	0	+	+	+	0	+	0		4	2+	4+
5	r'r	0	+	+	0	+	0	0	+	0	+	0	+	0	+	0	+	0	+	+	+	0	+	+	0	+	0		5	2+	4+
6	r''r	0	0	+	+	+	0	0	+	0	+	0	+	0	+	+	0	+	0	+	+	+	0	+	0	+	+	Co(b+)	6	1+	3+
7	rr	0	0	+	0	+	0	+	+	0	+	0	+	0	+	0	+	0	+	+	0	+	+	+	0	+	0	Bg(a+)	7	1+	4+
8	rr	0	0	+	0	+	0	0	+	0	+	0	+	+	0	+	0	0	+	+	+	0	+	0	+	0		8	2+	4+	
9	rr	0	0	+	0	+	0	0	+	0	+	0	+	0	+	0	+	0	+	+	0	+	+	+	0	+	+		9	2+	3+
10	R1R1	+	+	0	0	+	0	0	+	0	+	0	+	+	+	0	+	0	+	0	+	0	+	+	0	+	+		10	2+	3+
11	R1R1	+	+	0	0	+	0	0	+	0	+	0	+	+	+	+	+	+	0	+	+	0	+	+	0	+	+	Bg(a+)	11	3+	4+
Patient																												AC	0	vw+	

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Cold panels

	IS	RT x 30'
SCI	1+	2+
SCII	1+	2+
A1	0	0
A2	0	0
Autocontrol	0	0
I neg, adult	0	w+

	IS	17°
Cord 1	0	w+
Cord 2	0	w+
Cord 3	0	1+
A1	0	0
A1	0	0
A1	0	0
A2	0	1+

Antigen Phenotype

	Rh system				Kell							Duffy		Kidd		Lewis		MNSs				p	I	H	A ₁
	C	E	c	e	K	k	Kp ^a	Kp ^b	Kp ^b	Kp ^b	Js ^a	Fy ^a	Fy ^b	Jk ^a	Jk ^b	Le ^a	Le ^b	M	N	S	s	P1			
Patient																0	1+	4+	3+			2+			4+
Pos control																4+	3+	4+	3+			2+			4+
Neg Control																0	0	0	0			0			0

Questions:

1. In working up this urgent problem what hypothesis did the technologist make which then prompted the tests performed? What is the probable identity of this antibody(ies)? Is it an autoantibody or an alloantibody?
2. Why were those patient blood group phenotypes tested?
3. Could this antibody cause a hemolytic transfusion reaction? How would you select compatible blood for this patient?