

**ABID CASE #5**

Case study by Jim Perkins, M.D. (© 2006)



**History:** This patient was a 101 year old woman admitted for pneumonia and an aortic aneurysm. She had been transfused ten months earlier, at which time her antibody screen was negative.

**ABO and Rh Typing**

<A	<B	A1 cells	B cells	6% alb	<D	<D/AHG	CCC	Interp
0	0	4+	3+		3+			O pos

**Antibody Screen**

	Gel
SCI	0
SCII	vw+

**Direct Antiglobulin Test**

	Poly	IgG	<C3
AHG	0		
CCC	2+		

**Initial Panel**

8RB119		Rh system						Kell					Duffy		Kidd		Xg	Lewis		MNSs				P	Lutheran		Other	Cell	Gel		
Cell	Rh	D	C	E	c	e	V	K	k	Kp <sup>a</sup>	Kp <sup>b</sup>	Js <sup>a</sup>	Js <sup>b</sup>	Fy <sup>a</sup>	Fy <sup>b</sup>	Jk <sup>a</sup>	Jk <sup>b</sup>	Xg <sup>a</sup>	Le <sup>a</sup>	Le <sup>b</sup>	S	s	M	N	P1	Lu <sup>a</sup>	Lu <sup>b</sup>	Typings	Cell	Gel	
1	rr	0	0	0	+	+	0	+	+	0	+	0	+	+	+	0	+	0	0	+	+	+	+	+	0	0	+		1	vw+	
2	rr	0	0	0	+	+	0	0	+	0	+	0	+	+	0	+	0	+	0	+	+	+	+	+	+w	0	+		2	w+	
3	rr	0	0	0	+	+	0	0	+	0	+	0	+	+	0	+	+	+	0	+	0	+	0	+	0	+	0	+		3	0
4	R2R2	+	0	+	+	0	0	0	+	0	+	0	+	+	+	0	0	0	0	+	0	+	+	+	+	0	+		4	vw+	
5	R2R2	+	0	+	+	0	0	0	+	0	+	0	+	+	0	+	+	0	0	+	+	+	+	+	0	0	0	+		5	vw+
6	R2R2	+	0	+	+	0	0	0	+	0	+	0	+	+	+	0	+	+	0	+	0	+	0	+	+	0	+		6	vw+	
7	R1R1	+	+	0	0	+	0	0	+	0	+	0	+	+	0	+	+	+	0	0	+	0	+	+	+w	0	+		7	w+	
8	R1R1	+	+	0	0	+	0	0	+	0	+	0	+	0	+	+	+	0	+	+	0	+	0	+	+s	0	+		8	0	
9	RzR1	+	+	+	0	+	0	0	+	0	+	0	+	+	+	+	0	+	0	+	+	+	+	0	+s	0	+		9	w+	
10	r'r	0	+	0	+	+	0	+	+	0	+	0	+	+	0	+	+	+	+	0	+	+	+	+	+s	0	+		10	w+	
11	R1R2	+	+	+	+	+	0	+	0	0	+	0	+	0	+	+	+	+	0	+	0	+	+	0	0	0	+		11	0	
Patient																														AC	

**Selected cells**

8RA121		Rh system						Kell					Duffy		Kidd		Xg	Lewis		MNSs				P	Lutheran		Other	Cell	Gel		
Cell	Rh	D	C	E	c	e	V	K	k	Kp <sup>a</sup>	Kp <sup>b</sup>	Js <sup>a</sup>	Js <sup>b</sup>	Fy <sup>a</sup>	Fy <sup>b</sup>	Jk <sup>a</sup>	Jk <sup>b</sup>	Xg <sup>a</sup>	Le <sup>a</sup>	Le <sup>b</sup>	S	s	M	N	P1	Lu <sup>a</sup>	Lu <sup>b</sup>	Typings	Cell	Gel	
1	R1wR1	+	+	0	0	+	0	0	+	0	+	0	+	+	+	+	0	+	0	+	0	+	+	+	+	0	+	C <sup>w</sup>	1		
2	R1R1	+	+	0	0	+	0	+	+	0	+	0	+	+	+	0	+	+	0	0	+	0	+	+	0	0	+		2		
3	R2R2	+	0	+	+	0	0	0	+	+	+	0	+	0	+	+	+	0	0	+	+	+	+	+	+w	0	+		3	0	
4	Ror	+	0	0	+	+	+	0	+	0	+	0	+	0	0	+	0	0	0	0	0	+	+	+	+	+s	0	+		4	0
5	r'r	0	+	0	+	+	0	0	+	0	+	0	+	+	+	+	0	+	0	+	0	+	0	+	+	0	+		5		
6	r''r	0	0	+	+	+	0	0	+	0	+	0	+	+	0	+	+	+	+	0	+	+	+	0	0	0	+		6		
7	rr	0	0	0	+	+	0	+	+	0	+	0	+	0	+	+	0	+	0	+	+	+	+	+	+s	0	+		7		
8	rr	0	0	0	+	+	0	0	+	0	+	0	+	+	0	0	+	+	0	+	0	+	0	+	+	0	+		8		
9	rr	0	0	0	+	+	0	0	+	0	+	0	+	0	+	+	+	+	0	+	0	+	0	+	0	0	+		9	0	
10	rr	0	0	0	+	+	0	0	+	0	+	0	+	0	+	+	+	+	0	+	+	+	+	0	0	0	+		10		
11	R1R1	+	+	0	0	+	0	+	+	0	+	0	+	0	+	+	+	+	0	+	+	+	+	0	0	+	+		11		
Patient																														AC	

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**Questions:**

1. What is the probable identity of this antibody?
2. Comment on the varying strength of reactivity of the serum in the initial panel and in the various test systems used.
3. Is any further workup needed to prove it?
4. What is the probable immunizing stimulus in this case?
5. Does this antibody cause hemolytic transfusion reactions? Hemolytic disease of the fetus and newborn?
6. How would we select compatible RBCs for this patient? What percent of donors is expected to be compatible with this recipient?
7. What is the biochemical nature of the antigen? Which cells in the panels above likely come from African-American (A-A) donors? (Review the relevant blood group system, including disease associations and racial differences in antigen prevalence for this and other antigens.)