

ABID CASE #3

Case study by Jim Perkins, M.D. (© 2005)



History: This patient was a 78 year old woman with marginal zone/MALT lymphoma previously treated with chlorambucil, recently found to have a renal mass, and scheduled for a possible radical nephrectomy. She denied transfusion. She had two children, the second of which was jaundiced in the newborn period.

ABO and Rh Typing

| | | | | | | | | |
|----|----|----------|---------|--------|----|--------|-----|--------|
| <A | <B | A1 cells | B cells | 6% alb | <D | <D/AHG | CCC | Interp |
| 0 | 0 | 4+ | 3+ | NT | 0 | 0 | 2+ | O neg |

Antibody Screen

| | |
|------|-----|
| | Gel |
| SCI | 3+ |
| SCII | 3+ |

Direct Antiglobulin Test (tube method)

| | | | |
|-----|------|-----|-----|
| | Poly | IgG | <C3 |
| AHG | 0 | NT | NT |
| CCC | 3+ | | |

Initial Panel

| 8RA177 | | Rh system | | | | | | Kell | | | | | | Duffy | | Kidd | | Xg | Lewis | | MNSs | | | | P | Lutheran | | Other Typings | Cell | Gel | | | | |
|---------|-------|-----------|---|---|---|---|---|------|---|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|------|---|---|---|----|-----------------|-----------------|----------------|------|-----|--|--|--|--|
| Cell | Rh | D | C | E | c | e | 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 | P1 | Lu ^a | Lu ^b | | | | | | | |
| 1 | R1wR1 | + | + | 0 | 0 | + | 0 | 0 | + | 0 | + | 0 | + | 0 | + | 0 | + | 0 | 0 | + | 0 | + | + | + | + | 0 | + | C ^w | 1 | 4+ | | | | |
| 2 | R1R1 | + | + | 0 | 0 | + | 0 | 0 | + | 0 | + | 0 | + | + | + | 0 | 0 | + | 0 | + | 0 | 0 | + | + | 0 | + | | 2 | 3+ | | | | | |
| 3 | R2R2 | + | 0 | + | + | 0 | 0 | 0 | + | 0 | + | 0 | + | 0 | + | 0 | + | 0 | 0 | + | + | + | 0 | + | + | 0 | + | | 3 | 3+ | | | | |
| 4 | Ror | + | 0 | 0 | + | + | + | 0 | + | 0 | + | 0 | + | 0 | 0 | + | 0 | + | 0 | + | 0 | + | 0 | + | + | 0 | + | | 4 | 3+ | | | | |
| 5 | r'r | 0 | + | 0 | + | + | 0 | 0 | + | 0 | + | 0 | + | + | 0 | + | 0 | + | 0 | 0 | + | + | + | + | 0 | 0 | + | | 5 | 0 | | | | |
| 6 | r''r | 0 | 0 | + | + | + | 0 | 0 | + | 0 | + | 0 | + | + | + | + | + | + | 0 | 0 | + | + | + | + | + | 0 | + | | 6 | 0 | | | | |
| 7 | rr | 0 | 0 | 0 | + | + | 0 | + | + | 0 | + | 0 | + | 0 | + | 0 | + | 0 | 0 | + | 0 | + | + | + | 0 | 0 | + | | 7 | 0 | | | | |
| 8 | rr | 0 | 0 | 0 | + | + | 0 | 0 | + | 0 | + | 0 | + | + | 0 | + | 0 | + | 0 | + | + | 0 | + | 0 | 0 | 0 | + | | 8 | 0 | | | | |
| 9 | rr | 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 | 0 | + | | 10 | 0 | | | | |
| 11 | R1R1 | + | + | 0 | 0 | + | 0 | + | + | 0 | + | 0 | + | 0 | + | + | + | 0 | 0 | 0 | + | + | + | + | + | 0 | + | | 11 | 3+ | | | | |
| Patient | | | | | | | | | | | | | | | | | | | | | | | | | | | AC | 0 | | | | | | |

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Questions:

1. What is the probable identity of this antibody?
2. Is any further workup needed to prove it? What is a "rule out cell"? What is required for ruling out anti-C and -E in the presence of anti-D? Anti-K?
3. What is the probable source of the immunizing stimulus in this case?
4. Does this antibody cause hemolytic transfusion reactions?
5. Does this antibody cause hemolytic disease of the fetus and newborn?
6. How would we select compatible blood for this patient? What percent of donors is expected to be compatible with this recipient?
7. What is the biochemical nature of the antigen? What is its genetic relationship to the antigen involved in the previous case?