Liver-Kidney Surprise

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The Case

• 57 year old female awaiting a liver-kidney transplant required due to hepatorenal syndrome

• History:
  – Primary biliary cirrhosis
  – A NEG with Anti-C

• Transplant is successful and managed well without incident, and only compatible products administered.
  – 10 units of A NEG red cells
  – 8 units of A POS Fresh Frozen Plasma
  – 1 unit A NEG Platelets
The Case

- The patient suffers a code blue Day 2 post-op.
- Rapid drop in haemoglobin thought to be caused by bleeding due to surgery.

<table>
<thead>
<tr>
<th>Lab No</th>
<th>Time/Date</th>
<th>Spec</th>
<th>HGB</th>
<th>WBCC</th>
<th>PLT</th>
<th>NEUT</th>
<th>LYMPH</th>
<th>HCT</th>
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</thead>
<tbody>
<tr>
<td>53178-7607</td>
<td>c 20:20 29-Dec-11</td>
<td>BLOOD</td>
<td>86 D</td>
<td>6.4</td>
<td>57 L</td>
<td>5.85</td>
<td>0.19 L</td>
<td>0.25 L</td>
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<td>53178-7717</td>
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<td>BLOOD</td>
<td>98 L</td>
<td>12.0 H</td>
<td>57 D</td>
<td>10.49 H</td>
<td>0.69 L</td>
<td>0.30 L</td>
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<td>53178-5770</td>
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<td>BLOOD</td>
<td>96 L</td>
<td>8.3</td>
<td>88 L</td>
<td>6.91</td>
<td>0.79 L</td>
<td>0.15 L</td>
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<td>52860-0419</td>
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<td>BLOOD</td>
<td>100 D</td>
<td>14.0 H</td>
<td>84 D</td>
<td>12.42 H</td>
<td>0.54 L</td>
<td>0.28 L</td>
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<tr>
<td>54231-0845</td>
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<td>BLOOD</td>
<td>124</td>
<td>10.0</td>
<td>61 D</td>
<td>8.95 H</td>
<td>0.32 L</td>
<td>0.30 L</td>
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<tr>
<td>54231-1562</td>
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<td>BLOOD</td>
<td>117</td>
<td>11.5 H</td>
<td>97 L</td>
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<td>54231-4304</td>
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<td>96* L</td>
<td>6.86</td>
<td>0.23 L</td>
<td>0.35 L</td>
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</table>

- Patient stabilises after Medevac and additional compatible products issued.
The Case

On Day 6 post-op, the patient begins to deteriorate – Haemoglobin drops to 50g/L in 24 hours.

Normocytic anaemia; rouleaux, occasional fragmented cell; note haemolytic indices, haptoglobin likely low secondary to synthetic liver dysfunction. Haem Reg.

<table>
<thead>
<tr>
<th>Labno</th>
<th>Date</th>
<th>Time</th>
<th>ALB</th>
<th>GLOB</th>
<th>BILI</th>
<th>BILID</th>
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<tr>
<td>542322865</td>
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<td>c14:30</td>
<td>28 L</td>
<td>29 L</td>
<td>400 C</td>
<td>264 H</td>
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<td>542302117</td>
<td>04Jan12</td>
<td>c07:40</td>
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<td>19 L</td>
<td>320 C</td>
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<td>542505296</td>
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<td>c07:45</td>
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<td>18 L</td>
<td>166 H</td>
<td>65 H</td>
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<td>542479973</td>
<td>02Jan12</td>
<td>c07:30</td>
<td>36</td>
<td>18 L</td>
<td>137 H</td>
<td>55 H</td>
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</tbody>
</table>
The Case

Platelet count c/w film. Post transfusion. Spherocytes present, note liver Tx 26/12/2011, blood group A recipient (Donor group), also recent blood Tx ? haemolytic Tx reaction. Suggest repeat DAT.

<table>
<thead>
<tr>
<th>Time/Date</th>
<th>A1 CELL</th>
<th>B CELL</th>
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<tbody>
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<td>05:00 05-01-12</td>
<td>2</td>
<td>4</td>
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<tr>
<td>10:30 03-01-12</td>
<td>0</td>
<td>4</td>
</tr>
<tr>
<td>17:45 29-12-12</td>
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<td>4</td>
</tr>
<tr>
<td>23:40 26-12-11</td>
<td>0</td>
<td>4</td>
</tr>
</tbody>
</table>

Anti-A antibody
The Case

• Elution techniques several days later revealed antibody of Anti-A2 specificity

• Liver donor: O NEG

• Patient developed Passenger Lymphocyte Syndrome due to incompatible liver transplant, causing severe delayed haemolysis
Passenger Lymphocyte Syndrome (PLS)

- A type of transient graft-versus-host disease
  - Occurs when donor lymphocytes in the organ tissue are activated in the new host and target host red cells
- Incidence is generally considered infrequent, but has been reported as up to 29%
- Commences 7-14 days post-transplant and is self-limiting usually with a three month duration.
The Challenges

• Cause of haemolysis was not identified until antibody had presented in group testing
  – Haemoglobin was critically low by this stage

• Not being informed of the incompatibility proved a significant hurdle in transfusion testing

• Testing of a single transfusion specimen for 72 hours may have contributed to the delay in identification
All’s Well That Ends Well

- Patient has not required transfusion support since January 2012

- Current results show the transplants were successful
  - Antibody is assumed to have subsided
The Significance

- Close and consistent monitoring of transplant patients after the surgery is critical
- It is important to be aware of PLS and consider it as a possible side-effect
  - Rapid, unexpected and persistent drop in Haemoglobin without obvious bleeding source
  - Signs of haemolysis and DAT Positive, transfusion reaction unlikely
- Liaisons between departments is essential to effective patient management
References


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