Reviewer's report

Title: Exsanguination of a home hemodialysis patient as a result of misconnected blood-lines during the wash back procedure: A case report

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Reviewer: Robert P Pauly

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The case presented by Allcock and colleagues reports a unique, unexpected, and disastrous outcome for a patient conducting independent home hemodialysis whereby the patient inadvertently misconnected his venous line into a saline flush bag instead of the arterial line. Once the dialysis pump was engaged this misconnection resulted in blood being pumped out of the patient and into the saline bag, instead of pumping saline out of the saline bag and into the patient (thereby flushing the lines). The patient died as a result of this.

Minor Essential Revisions

1. The terminology of “exit” and “entrance” ends can be difficult to sort out for programs not used to these semantics. I would favour saying “exit/venous" and “entrance/arterial" ends.

2. By the way the scenario is described in the case report, it seems there is usually a disconnection of the arterial line from the patient. The person then takes this line and connects to the saline bag in order to rinse back the blood through the dialyzer and lines into the patient. This may be standard procedure in some home hemodialysis units but not in others. Please indicate the usual protocol at the end of dialysis for the wash back procedure including a diagram (see attached). Note: other units have a y-connect from the saline bag into the arterial line so that when a patient clamps the arterial line between the cannulation site and the y-connect, the pump must draw from the saline bag – because this connection is engineered into the arterial line, there cannot be a reversal as occurred in this case. As well, using this latter technique also does not necessitate a disconnection of the arterial needle from the patient until the entire wash back procedure in complete and both needles can be removed simultaneously. People who utilize this latter technique may initially have a difficult time visualizing what actually happened in the presented case and thus a diagram and detailed protocol of what the technique entails would be helpful.

3. There are a number of minor grammatical errors:

   Background: commonest should be most common; based on Auckland should be base in Auckland; performing their haemodialysis should be performing his haemodialysis; later in the text should replace sub judice with under investigation.

4. May mention that while it is recommended that patients are not alone when performing hemodialysis this is not a prerequisite.
5. Needs figure labels
6. Figure legend of Figure 1 still contains the patient’s name – please remove

**Level of interest:** An article of importance in its field

**Quality of written English:** Acceptable

**Statistical review:** No, the manuscript does not need to be seen by a statistician.

**Declaration of competing interests:**

I declare that I have no competing interests