

A Jehovah's Bloodless Tale

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Abstract

Case Report

Background: Jehovah's Witnesses are a subgroup of Christianity who refrained from blood transfusions. As of 2017, there were reported 5069 Jehovah's Witnesses in Malaysia. However, this is concerning as cardiac surgery is known to be associated with a high risk of perioperative blood loss and allogeneic blood transfusions. Recent studies always compared restrictive (Hb 7.0–8.0 g/dl) and liberal (Hb 9.0–10.0 g/dl) transfusion strategies. No study took into consideration the outcomes of patients with Hb less than 7.0g/dl. We are reporting a case and outcome of a patient who required a Redo Triple Valve surgery with no blood transfusion. **Methods:** 40 year old Jehovah's female, with underlying CRHD who underwent a DVR (Aortic & Mitral) (Tissue) in 2004 currently presented with degenerative prosthetic valve. Upon sternotomy dense adhesions were noted. Meticulous resections and hemostasis was achieved as surgery progressed with the adjunct of Cell saver. Bicaval cannulation and selective cardioplegia administration via coronary ostium was performed. Mitral valve was accessed via a transeptal approach and replaced with a size 27/29 mm On-X valve. As the STJ was only 19mm, root enlargement with autologous pericardium was performed and a size 19mm SJM valve was implanted. Cross clamp was released and De Vega TAP was performed on a beating heart. Patient came off bypass with minimal support. Bypass time was 276minutes with Cross clamp time of 235 minutes and blood loss of 300mls. Chest was packed overnight and left opened to conserve blood and optimize clotting. Delayed chest closure was performed on POD 1 and patient was extubated POD 3. POD 4 patients documented Hb was 5.0g/dl, however patient compensated well and did not require any blood transfusion or inotropic support. Patient was discharged well on POD 9 with a Hemoglobin level of 6.7g/dl. **Discussion:** Preoperatively, patient was given IV iron and Hb level was boosted. During surgery the use of Cell Saver and meticulous surgical technique was pivotal besides minimal priming volume and short circuit lines. The manner of packing the chest postop to allow further clotting and reduction in blood loss also made a major difference. As the patient was young with no other comorbidities, she could compensate well a significant drop in Hb and only required oral hematinics postoperatively. **Conclusion:** 1. It is possible to perform a successful complex cardiac surgery with no blood transfusion. 2. Young patients with good cardiac reserve can compensate with low counts of hemoglobin and the risk of long term transfusion related complications should be weighed against its immediate benefit. 3. Clear guidelines for patients with religious beliefs prohibiting them from blood transfusions should be made available.

Keywords: Jehovah, Aortic Valve Replacement, Mitral Valve Replacement, Complex Cardiac Surgery, Blood Transfusion.

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BACKGROUND

Jehovah's Witnesses are a subgroup of Christianity who refrained from blood transfusions. As of 2017, there were reported 5069 Jehovah's Witnesses in Malaysia. However, this is concerning as cardiac surgery is known to be associated with a high risk of perioperative blood loss and allogeneic blood transfusions. Recent studies always compared restrictive (Hb 7.0–8.0 g/dl) and liberal (Hb 9.0–10.0 g/dl) transfusion strategies. No study took into consideration the outcomes of patients with Hb less than 7.0g/dl.

We are reporting a case and outcome of a patient who required a Redo Triple Valve surgery with no blood transfusion.

METHODS

40 year old Jehovah's female, with underlying CRHD who underwent a DVR (Aortic & Mitral)(Tissue) in 2004 currently presented with degenerative prosthetic valve. Upon sternotomy dense adhesions were noted. Meticulous resections and hemostasis was achieved as surgery progressed with the

adjunct of Cell saver. Bicaval cannulation and selective cardioplegia administration via coronary ostium was performed. Mitral valve was accessed via a transeptal approach and replaced with a size 27/29 mm On-X valve. As the STJ was only 19mm, root enlargement with autologous pericardium was performed and a size 19mm SJM valve was implanted. Cross clamp was released and Devega TAP was performed on a beating heart. Patient came off bypass with minimal support. Bypass time was 276minutes with Cross clamp time of 235 minutes and blood loss of 300mls. Chest was packed overnight and left opened to conserve blood and optimize clotting. Delayed chest closure was performed on POD 1 and patient was extubated POD 3. POD 4 patients documented Hb was 5.0g/dl, however patient compensated well and did not require any blood transfusion or inotropic support. Patient was discharged well on POD 9 with a Hemoglobin level of 6.7g/dl.

DISCUSSION

Preoperatively, patient was given IV iron and Hb level was boosted. During surgery the use of Cell Saver and meticulous surgical technique was pivotal besides minimal priming volume and short circuit lines. The manner of packing the chest postop to allow further clotting and reduction in blood loss also made a major difference. As the patient was young with no other comorbidities, she could compensate well a significant drop in Hb and only required oral hematinics postoperatively.

CONCLUSION

- It is possible to perform a successful complex cardiac surgery with no blood transfusion.
- Young patients with good cardiac reserve can compensate with low counts of hemoglobin and the risk of long term transfusion related complications should be weighed against its immediate benefit.
- Clear guidelines for patients with religious believe prohibiting them from blood transfusions should be made available.

REFERENCES

1. Millenarian: Beckford, James A. *The Trumpet of Prophecy: A Sociological Study of Jehovah's Witnesses*. Oxford: Basil Blackwell.1975; 118–119, 151, 200–201.
2. <https://www.jw.org/en/jehovahs-witnesses/worldwide/MY/>
3. 2017 EACTS/EACTA Guidelines on patient blood management for adult cardiac surgery Domenico Pagano Milan Milojevic Michael I Meesters Umberto Benedetto Daniel Bolliger Christian von Heymann Anders Jeppsson Andreas KosterRuben L Osnabrugge Marco Ranucci ... Show more *European Journal of Cardio-Thoracic Surgery*. 53, 1(1): January. 2018: 79–111, <https://doi.org/10.1093/ejcts/ezx325> Published: 03 October 2017.