

## ANAESTHETIC MANAGEMENT OF A CASE OF INTESTINAL OBSTRUCTION IN A RELIGIOUS SECTION OF JEHOVAH'S WITNESS

Shah Bhavini\*, Pandit M M Rao\*, Gupta Arun\*, Dhulkhed V K\*

### Abstract

*A 65-year-old, male Jehovah's Witness underwent resection of bowel which had been detected after a work-up for pain in abdomen and abdominal distension. Despite proper anaesthetic management and meticulous hemostasis, significant intraoperative blood loss occurred. The initial preoperative haemoglobin level was 6 gm/dL. Perioperative management requires general anaesthesia with central venous pressure monitoring and fluid and volume management with colloids. The clinical concerns pertaining to the perioperative management of the Jehovah's Witness are discussed along with the patient's course and management.*

**Key Words:** *Jehovah's Witness, Anaemia, Anaesthesia, Autologous transfusion.*

### Introduction

The Jehovah's Witness Religious Sect originated in Pennsylvania during the late 1870s under the guidance of Charles Taze.<sup>[1]</sup> The members of "Jehovah's Witness", a group who refuses blood transfusion from others, even auto transfusion, blood products and colloids of animal origin like albumin, pose a special challenge to anaesthesiologists/physicians and are often turned down by the hospitals. The members of Jehovah's Witnesses do not admit total blood, red cells, leukocyte concentrate, and plasma or platelets transfusion. Religious understanding, however, does not absolutely prohibit the use of blood products such as albumin, immunoglobulin's, fibrin preparations, self-transfusion (provided there is no disconnection between blood removal and infusion), erythropoietin and organ transplantation. This belief is based on

interpretation of three Biblical passages. One section determined that blood transfusion should be forbidden because it violated God's law. At present the total number of Jehovah's Witness is approximately 7,124,443 out of which 29,700 are in India. Ethical, medical and legal dilemmas occur when these patients present for surgery because of their refusal for blood transfusion. There are very few reported cases of Jehovah's witnesses in the anaesthetic literature in the Indian context.

### Case Report

A 65 yr old male, complained of distension and pain in abdomen of 5 days duration. When it worsened, he came to the hospital, where he was diagnosed to be a case of obstructed bowel.

During the preoperative interview, the patient rejected the use of homologous blood products and any form of autologous transfusion as he was a Jehovah's Witness section member. The preoperative haemoglobin level was 6gm% without any evidence of other major systemic diseases. Special consent related to Jehovah's Witness was signed by the patient and his

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\* Dept of Anaesthesia, RMC, Loni.

**Address for correspondence:**

Dr Bhavini Shah, Department of Anaesthesia, Rural Medical College, Pravara Institute of Medical Sciences, Loni-413736, District- Ahmednagar, Maharashtra (India).  
E-mail:ot@pmtpims.org

family members. Preoxygenation by mask with 100% oxygen for 3 minute was carried out. General anaesthesia was induced with intravenous Fentanyl 1.5 microgram/kg, Propofol (12ml 1%); and followed by Succinyl choline 100 mg. Sellicks manoeuvre was applied, trachea was intubated with cuffed endotracheal tube. Right Internal Jugular vein was cannulated. Central venous pressure (CVP) measured 12cm of water. Anaesthesia was maintained with Oxygen and Nitrous oxide in the ratio of 50:50 along with titrated doses of Isoflurane through Bains circuits and intermittent boluses of Fentanyl and midazolam. Atracurium was used as muscle relaxant. Heart rate, blood pressure, oxygen saturation, CVP, urine output and blood loss were continuously monitored.

Infusion of colloid: Tetra starch: Voluven-R (6% hydroxyethyl starch) was started after induction and continued. Through a second intravenous line crystalloid was administered for maintenance needs. Central venous pressure maintained around 12cm of water upto the time of resection of a loop of obstructed bowel, and then went down to 2cm. the blood loss was approximately 700 ml. Infusion of Voluven (500 ml) restored the hemodynamic parameters. Operating time was 3 hours. During this period a total of 2 litres of crystalloid i.e. Dextrose Normal Saline 1 litre and Ringer Lactate 1 litre and a total of 1 litre of Voluven were infused.

Post operative CVP remained at 6cm of water. Intravenous Neostigmine 2.5mg and Atropine 1.2 mg were used for reversal of muscle relaxation. After extubation patient was transferred to intensive care unit for observation and management. Postoperative haemoglobin level was 5.5 gm%. Patient was discharged from ICU after two days.

## Discussion

The legal history regarding Jehovah's Witness and blood transfusion is complex<sup>[1, 2]</sup> However

one must realise that for elective surgeries involving a competent adult having faith in Jehovah's Witness, the court typically rule that every individual of sound mind and sufficient age has the legal right of self determination in medical matters and thus may refuse blood transfusion. The only exception is to protect innocent third parties, typically children.<sup>[2]</sup>

Physicians caring for a Jehovah's Witness must also make management decisions based on their own beliefs, ethical concerns and possible legal consequences. The physician may decline elective medical assistance to a Jehovah's Witness who refuses to allow blood transfusion. However, once a physician agrees to proceed with medical assistance under the limitations imposed by the patient's desires, these limitations must be respected.

During the preoperative interview with a person having faith in the Jehovah's Witness, it is important to explore religious commitment, explain treatment options and ascertain what treatment options the patient is willing to accept.

Most of these patients reject the use of homologous blood products and human albumin, but will accept crystalloids and synthetic colloids. They also believe that their blood must remain in a continuous circuit within their body and may or may not allow normovolemic hemodilution and auto transfusion during surgery. Finally, the Jehovah's Witness member must sign a consent form documenting refusal of blood transfusion and absolving the hospital and physicians of any liability should an untoward event occur related to his or her refusal.<sup>[3]</sup>

Major surgery can be performed safely in the Jehovah's Witness member who refuse blood transfusion like cardiac surgery<sup>[4]</sup>, heart transplantation<sup>[5]</sup>, major gynaecologic and obstetric surgery<sup>[6]</sup>, and major orthopaedic surgery.<sup>[7]</sup>

Table I lists the intraoperative techniques utilised in patients with faith in the Jehovah's

Table I: Intraoperative techniques utilized in the Jehovah's Witness who refuse blood Transfusion.

No	Technique	Aim
1	Normovolemic hemodilution & Autotransfusion	Decreases surgical blood loss
2	Deliberate hypotension	Decreases surgical blood loss
3	Deliberate hypothermia	Decreases surgical blood loss Increase oxygen delivery
4	Increase FiO <sub>2</sub>	Increase oxygen delivery
5	Sedation & Paralysis	Decrease oxygen consumption
6	Altered operative technique	Decrease surgical blood loss
7	Drugs that enhance blood coagulability	Decrease surgical blood loss
8	Drugs that increase cardiac output	Increases oxygen delivery

witness who refuses blood transfusion.<sup>[3]</sup> The goals of all these techniques are to decrease surgical blood loss, decrease oxygen consumption and increase later time. The major benefit of normovolemic hemodilution and autotransfusion is a decrease in surgical blood loss; other advantages include a decrease in blood viscosity, a decrease in systemic vascular resistance, an increase in cardiac output, and an increase in microcirculatory flow. All of these help to maintain cellular oxygenation.

Continuous monitoring of the mixed venous oxygen saturation may also help to guide

therapy during management of normovolemic hemodilution.

Although normovolemic hemodilution, deliberate hypotension and deliberate hypothermia are the major intraoperative techniques utilized in the Jehovah's Witness who refuse blood transfusion, other techniques may be of benefit as well. Continuation of sedation<sup>[8]</sup> and paralysis decrease oxygen consumption. Drugs that enhance blood coagulability, such as Desmopressin, may be administered to decrease surgical blood loss.<sup>[9]</sup> Finally, drugs that increase cardiac output and cause peripheral vasodilatation, such as dobutamine (5-15 mcg/kg/min IV) may be administered to increase oxygen delivery.

Unfortunately even when preoperative and intraoperative techniques are utilised to decrease surgical blood loss in these patients, significant intraoperative blood loss may occur.<sup>[10]</sup>

Post operative management of the severely anaemic patients with faith in Jehovah's Witness who refuses blood transfusion is extremely challenging and is based on minimising oxygen consumption and maximising oxygen delivery by the above mentioned methods.

Finally intravenous iron dextran<sup>[11]</sup> may be administered during pre and post operative period to optimise erythropoiesis in the severely anaemic Jehovah's Witness who refuses blood transfusion.

## Conclusion

Surgeries can be performed easily and safely in the Jehovah's Witness patient with preoperative haemoglobin of 6 gm% without any evidence of any major systemic disease who refuse blood transfusion, by utilising pre

operative and intra operative techniques that decrease surgical blood loss, and increase oxygen delivery.

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