

Major head and neck surgery on Jehovah's witnesses is safe and feasible.
Cases before and after protocol implementation

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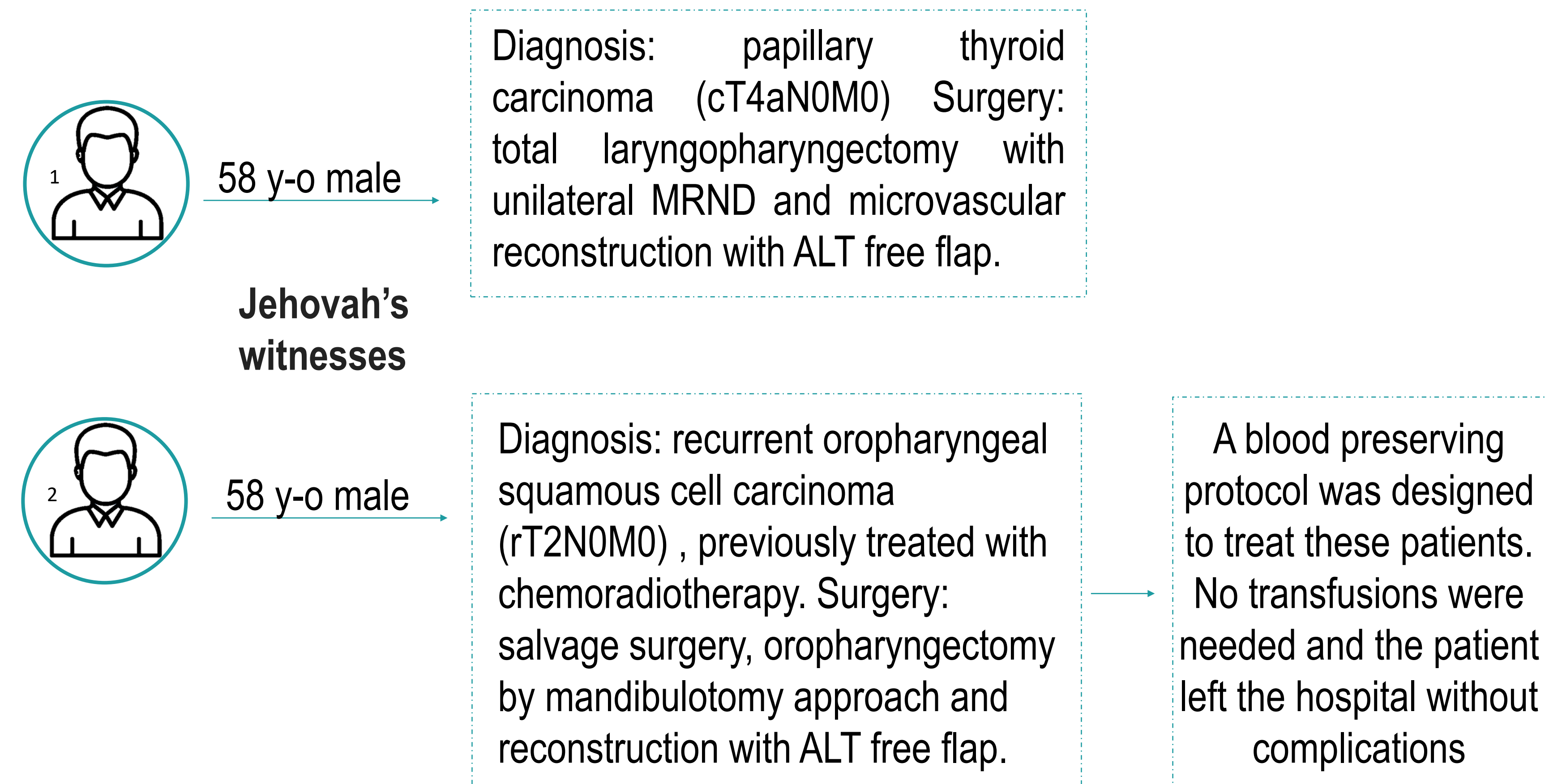
Introduction

Jehovah's Witnesses are a Christian religious group that rejects blood components transfusion, based on the idea that the transfusion pollutes the soul and impedes heaven entrance. For some advanced head and neck tumors, the best treatment alternative is major surgery with complex reconstructive procedures, that includes the potential necessity of blood transfusion in 29-43% of cases. Most physicians face an ethical dilemma of operating on them with the risk of uncontrollable bleeding and the impossibility of using blood transfusion. However, a preventive strategy can be designed to reduce the risks of intraoperative bleeding together with a preoperative preparation with blood-saving techniques.

Objective

We present two cases of patients with advanced head and neck tumors who underwent major surgery with microvascular reconstruction before and after the design a protocol to avoid blood transfusion.

Methods:



Results:

We learned from the first case and some changes were made to treat the second one.(Table1)
The protocol included:

1. Preoperative stimulation of the erythropoiesis with erythropoietin
2. Routine intraoperative use of tranexamic acid
3. Anesthetic technique of permissive hypotension and normovolemic hemodilution
4. Intraoperative use of devices to avoid bleeding, as ultrasonic scalpel, and to recover blood, as cell-saver
5. Postoperative protocol of erythropoiesis stimulation as used in the preoperative period
6. Policy of blood saving with a decrease in the blood samples for routine laboratory tests

▶ 1. Erythropoietin (EPO)

The goal is to stimulate the proliferation of erythroid progenitor. Our scheme: 400 µg/Kg for 3 to 5 days before surgery and 150 µg/Kg for 3 to 5 days after surgery.

*Adequate availability of iron is required. Normal iron levels → 300 mg of elemental iron per day, orally, ferritin <200 ng/ml or transferrin saturation <20% should receive parenteral iron.

2. Tranexamic acid (TA)

The goal is to significantly reduce blood loss caused by surgery. Our scheme: 10 mg/kg .The dose the dose can be repeated every 3 hours.

Table 2. SCC: squamous cell carcinoma; MRND: modified radical neck dissection.

Author	Number of patients, sex and age , diagnosis	Surgery	Hb (g/dL), Hct (%) level , before/ after surgery	Interventions	Blood loss (cc)/ operative time (hours)
Kullar et al (2011)	1 patient; 48 , female; Oral cavity, SCC cT4N0M0.	Resection, MRND, free flap.	11,- / 10, -	2 week preoperative course of oral ferrous sulphate; TA	500/ 11
Van Hemelen et al (1998)	2 patients; a. 57 ,female; Oral cavity, SCC T4N2M0, b. 43, female; Oral cavity, SCC T1N0M0	Resection, MRND, free flap.	a. 16,- / 10, - b. 14.2,- / 11.5, -	Hypovolemic hemodilution, permissive hypotension, TA	a. 820/10 b. 240/6
Genden et al (1995)	1 patient; 58 ,male; Oral cavity, SCC T3N0M0	Resection, MRND, free flap.	13.3, 36.6/ 15.2, 41	EPO and ferrous sulfate 14 days before surgery	400/-
Martin et al (2013)	4 patients; 46 to 67; Oral cavity, SCC , T2N0M0	Resection, free flap.	-	EPO and ferrous sulfate before surgery	- / 8.5 to 15.5
Skoner et al (2007)	5 patients; a. 58, male; recurrent nasal SCC; b. 75, female; maxillary sinus T3N0M0; c. 42, female; tongue SCC T2N2cM0; d. 57, male; maxillary sinus T4N0M0; e. 62 ,male; tongue SCC T2N1M0	Resection, MRND and free flap	a. - , 46/ - ,41 b. - , 36/ - ,30 c. - , 39/ - ,33 d. - , 38/ - ,26 e. - ,42/ - ,36	EPO and ferrous sulfate 1 month before surgery, permissive hypotension.	-

Hb: Hemoglobin, Hct: hematocrit *7^o postoperative day, had a progressive neck hematoma

Discussion and Conclusions

Almost 50% of patients with head and neck tumors consult with advanced tumors. Conditions of resectability of the tumor and operability of the patient determines the possibility of using surgical procedures. To be a Jehovah's Witnesses cannot be a reason to deny the best available treatment.

There are few reported cases of major head and neck surgery in Jehovah's Witnesses. (Table 2). A successful protocol was designed for surgical treatment of Jehovah's Witnesses with head and neck cancer. It is easy to be implemented without necessity of blood transfusion. Its use in other patients is encouraged to avoid the adverse effect of transfusion in overall survival in patients with cancer.