

Management of Bilateral Wilms' Tumors in the Daughter of Jehovah's Witnesses

By Jonathan H. Ross, Robert Kay, and Fred Alexander
Cleveland, Ohio

Surgical treatment of the children of Jehovah's Witnesses is a challenging problem both ethically and technically. The authors recently operated on such a child who had bilateral Wilms' tumors. Techniques used to minimize blood loss included erythropoietin, hemodilution, and the argon beam coagulator. A full understanding of the religious, legal, and ethical issues is essential when treating the children of Jehovah's Witnesses.

J Pediatr Surg 32:1759-1760. Copyright © 1997 by W.B. Saunders Company.

INDEX WORDS: Bilateral Wilms' tumor, Jehovah's witness, erythropoietin.

SURGICAL TREATMENT of patients who are Jehovah's Witnesses is a challenging problem both ethically and technically. This is particularly true when treating the children of Jehovah's Witnesses. Clearly, the primary considerations are the life and health of the child. However, the level of comfort the parents have with the child's treatment must be considered in the total equation of the care of the child. It is important to take all reasonable measures to avoid the use of blood products in these children.

CASE REPORT

A 4-year-old daughter of Jehovah's Witnesses, weighing 16 kg, presented to an outside institution with an abdominal mass. Evaluation showed a large right renal mass and a smaller left renal mass. The patient underwent an incisional right renal biopsy and a needle biopsy of the left renal mass. Findings of these biopsies showed favorable-histology Wilms' tumors. She was referred to the Cleveland Clinic Children's Hospital for further treatment. She received four courses of actinomycin and vincristine over a 4-month period with an initially good response. However, after the fourth course, an increase in the size of the right tumor was noted. At that time, ultrasound scan showed two masses in the right kidney measuring $3.0 \times 3.8 \times 4.3$ cm and $8.7 \times 8.1 \times 11$ cm. There was a $1.7 \times 2.0 \times 1.2$ -cm mass in the mid pole of the left kidney (Fig 1). There was no caval thrombus. The patient had been receiving erythropoietin while on chemotherapy.

The morning of surgery her hematocrit level was 29.5. After induction of anesthesia, hemodilution was accomplished by phlebotomizing her for 520 mL of blood into an intravenous bag that was kept in continuity with her via intravenous tubing. Crystalloid was infused through a separate intravenous line to maintain intravascular volume and accomplish hemodilution. Abdominal exploration was performed through a transverse incision. Enlarged lymph nodes in the retroperitoneum were removed and showed necrotic tumor. The left kidney was explored, confirming a solitary mass. Wedge resection of the midpole tumor with a margin of normal parenchyma was accomplished. An argon beam coagulator was used to help with hemostasis in the resection bed. The left kidney was clearly viable after the tumor excision, and a right radical nephrectomy was performed.

Immediately after hemodilution, the patient's hematocrit level was 15. At the end of the procedure her hematocrit level was 9.0. Her autologous blood was transfused back, and her postoperative hematocrit

level was 14. During the case she received 3,820 mL of crystalloid, 320 mL of Hespan, and 200 mL of albumin. Her estimated blood loss was 650 mL. She was hemodynamically stable throughout the operation.

Postoperatively, she remained hemodynamically stable, and had an uncomplicated postoperative course. She was placed on erythropoietin immediately after surgery, and subsequently iron was added. Chemotherapy was resumed on postoperative day 5, and she was discharged home on postoperative day 6 with a hematocrit level of 17. One month after her operation her hematocrit level was 27.6.

DISCUSSION

Several factors allowed us to perform this operation without blood products. The most important strategy was hemodilution. This allowed blood loss to occur with a hematocrit level of 15, followed by autotransfusion of blood with a hematocrit level of 29, thereby decreasing the net loss of red blood cells by approximately 50%.

Blood loss might have been somewhat reduced by clamping the renal artery for the left tumor excision. However, the small size of the renal artery in this young child increased the risk of persistent vasospasm, and in the face of a contralateral nephrectomy, we elected not to clamp the artery.

Additional adjuncts for minimizing the need for blood products were use of the argon beam coagulator and erythropoietin. The latter optimized her preoperative hematocrit and facilitated return to an adequate hematocrit postoperatively so that chemotherapy could be resumed in a timely fashion.

Jehovah's Witnesses refuse to accept blood products because of a literal interpretation of various Biblical

From the Section of Pediatric Urology and Department of Pediatric Surgery, Cleveland Clinic Children's Hospital, Cleveland, OH.

Address reprint requests to Jonathan H. Ross, MD, Cleveland Clinic Foundation Children's Hospital, Peds Urology/A100, 9500 Euclid Ave, Cleveland, OH 44195.

*Copyright © 1997 by W.B. Saunders Company
0022-3468/97/3212-0027\$03.00/0*

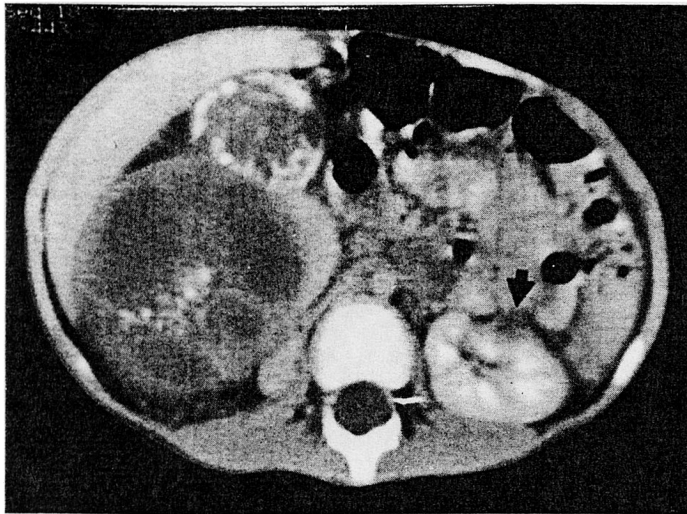


Fig 1. Postchemotherapy computerized tomography scan demonstrates large right-sided Wilms' tumor and 2-cm left-sided Wilms' tumor (arrow).

passages, such as Acts 15:19-21.¹ In this passage, Paul is determining which of the Jewish laws gentiles who accept Christianity must follow: "Therefore my judgement is that we should not trouble those of the Gentiles who turn to God, but should write to them to abstain from the pollutions of idols and from unchastity and from what is strangled *and from blood*" [italics added].² Legal and ethical considerations clearly support the right of a competent adult to refuse transfusions (or any other treatment).^{3,4} A physician should be comfortable taking into account a patient's religious proscription against blood transfusions in weighing the risks and benefits of various treatments, just as a patient's level of concern regarding impotence, for example, should be considered in deciding the best treatment for prostate cancer. Furthermore, a surgeon is ethically and legally bound to avoid blood transfusions in an adult refusing such treatment, even if death is a certain result of that refusal. However, if a physician feels that a patient's refusal to accept blood precludes any reasonable medical treatment, the physician may refuse to treat the patient, and is not legally required to refer the patient to someone willing to offer "bloodless treatment."

Although patient autonomy is paramount in decisions regarding adult patients, the right of parents to refuse treatment for their children, even for religious reasons, is limited. The US courts have consistently upheld the duty of physicians to perform transfusions in children against their parents' wishes when transfusion is clearly in the best medical interest of the child.³ There are state statutory procedures for obtaining court-ordered treatment in elective situations, and these avenues should be pursued. However, the right of mature adolescents to refuse transfusions for themselves has been upheld.

In designing a surgical strategy, the preoperative discussion with the family must be thorough. There are a variety of sects of Jehovah's Witnesses, each with its own interpretation of the rules. Most, although not all, will refuse cell-saver techniques because the autologous blood is not kept in continuity with the patient. Most will accept hemodilution and retransfusion if continuity is maintained. Acceptance of albumin is variable.

Although the welfare of the child is the primary consideration, all reasonable attempts should be made to comply with the family's wishes. Dogmatic approaches should be avoided, and the religious beliefs of the parents should be given reasonable weight in balancing the risks and benefits of treatment options. A reasonable medical therapy may be offered as an alternative to an operation that places the child at high risk of requiring a transfusion. For example, preoperative chemotherapy for a very large Wilms' tumor could be considered. Furthermore, steps to avoid transfusion, that might not otherwise be used, such as hemodilution, should be employed. However, once the decision to operate has been made, and all reasonable measures to avoid transfusion have been undertaken, the surgeon is bound to perform a transfusion in a child, despite a lack of parental consent, in the event of life-threatening bleeding. The preoperative discussion and informed consent should reflect this position. In our experience, if the parents believe the surgeon is working with them in good faith to avoid the need for a transfusion, they will accept the notion that the surgeon may ultimately perform a transfusion without their consent.

REFERENCES

1. Watchtower Bible and Tract Society: Questions from readers. The Watchtower, 110:30-31, 1989
2. The Holy Bible, Revised Standard Version. Philadelphia, PA, A.J. Holman Co, 1962, pp 1104-1105
3. Rosoff AJ: Consent to medical and surgical procedures, in Younger PA (Ed): Hospital Law Manual. Rockville, MD, Aspen, administrators vol. 1, 1992, pp 1-177
4. Jonsen AR: Blood transfusions and Jehovah's Witnesses. Crit Care Clin 2:91-100, 1986