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Editorial

Living Transplantation in Adult, From Living Donor. A Valid Option[☆]



El trasplante de hígado en adulto, procedente de donante vivo. Una opción válida

The use of grafts coming from living donors was first initiated at the Hospital de Clínicas in San Pablo, Brazil, by Raia et al.,¹ who had extracted segments II and III from the mother of a patient with biliary atresia. However, neither this nor the following surgery was successful.

The first series of surgical interventions in pediatric patients was conducted in Chicago at the University of Illinois, which demonstrated the possibilities for success of this procedure.²

Initially, the utilization of living donors was restricted to the treatment of pediatric patients, and especially in countries with a lower number of brain-death donors,¹ pediatric donors³ or in countries where the use of these brain-death donors was not accepted.^{4,5}

Transplantation in pediatric patients using adult brain-dead donors required the reduction of the graft in order to fit into the right subphrenic space,^{6,7} which had the advantage of limited manipulation of the hepatic hilum, but the disadvantage of losing a part (sometimes considerable) of the liver parenchyma. For this reason, the idea to split the donor liver was conceived in order to obtain 2 liver grafts that could be adapted to either 2 children or one adult (right liver lobe) and one child (segments II and III or left liver lobe).^{8–11}

Theoretically, splitting the liver to obtain 2 grafts from one single donor would be the best alternative to increase the number of transplant recipients and thereby reduce waiting lists, mortality rates and the progressive decline in potential recipients. Nonetheless, the first requirement was the age of the donor, treatment of the patient in the corresponding ICU, appearance of the liver and previous biopsies, which would thus identify the best grafts for splitting. Currently, this type of graft is rare, using older donors with macrosteatosis of 20%–30%, donors with C virus infection, benign tumors or those affected by the trauma that caused brain death.

In any event, we must consider that the results from the use of splitting are similar to those from living donors or total liver grafts, as long as they are not used for urgent transplantation.¹²

In spite of the criticism toward the use of liver segments from living donors, the results have demonstrated its possibilities, from an initial trial phase to the current phase in which it is another option in patients with indication for liver transplantation.^{13–16}

However, the ideal situation would be the use of segments II and III or the left liver lobe for a pediatric patient, which would also constitute the best option for a split liver graft. In any case, the recipients, classified according to their anthropometric data with weights from 40 to 50 kg and 165 cm in height, could be susceptible for transplantation of the left liver lobe from a living donor. This indication has been most frequently used in Japan,^{4,5} and the first transplantation in Europe of this type was performed by our group in 1994.¹⁴

The volumetric studies of the donor and recipient prior to transplantation with a living donor frequently demonstrate the need to use the right liver lobe of the donor^{13–15} over the left lobe. The loss of 60% of the total liver mass is well tolerated by donors, and no blood transfusion is required during extraction. This is a priority in transplantation, as it avoids the possibility for viral contamination and improves prognosis.

The study by Prof. García-Valdecasas et al. is an excellent example of the results of liver transplantation using grafts from living donors in adults. First of all, it emphasizes the appearance of small-for-size syndrome, most frequently in the use of the left liver lobe, which led to a greater number of re-transplantations. As they clearly explain, the most common complication arises in the biliary reconstruction, specifically the end-to-end duct anastomosis. In our adult patients we use a Kehr tube as a tutor, open in two or more branches

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that remained inside the segmental intrahepatic tree, withdrawing the tutor three months after its placement.¹³

In pediatric donors, we prefer cholangiojejunostomy because it has provided better results in our experience.

As stated by García-Valdecasas et al. in their excellent article, the use of living donors in liver transplantation is a valid option that provides, at the very least, the same results as the use of optimal grafts from cadaveric donors.

In our country, the ministerial committee for the study of this therapeutic option did not accept its use in urgent transplantation, which in itself could cause bias. Likewise, the indication of this option should be studied in greater detail in situations of hepatocellular carcinoma and in post-necrotic cirrhosis secondary to virus C infection because the donors expect to save the lives of their loved ones forever, often disregarding the technical and biological limitations of this procedure.

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