

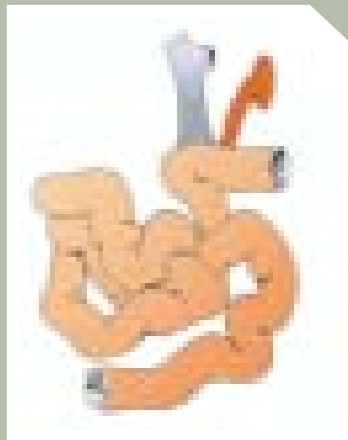
Girish Gupte

Paediatric small bowel transplant comes of age

by Girish Gupte, Consultant Paediatric Hepatologist, Birmingham Children's Hospital.

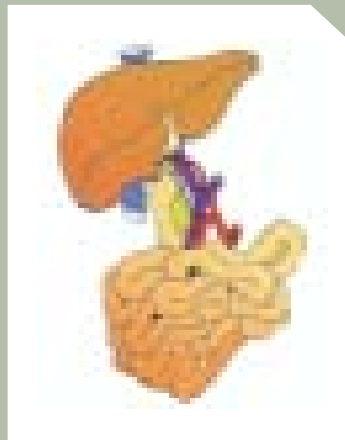
Eating is important to all of us, but especially for the development of social skills and speech in children. Sadly some children are denied the pleasure of eating as they have intestinal failure and cannot absorb food. Intestinal failure may be due to insufficient bowel (due to surgery in the newborn period — this is called short bowel syndrome e.g gastroschisis, volvulus, malrotation etc), abnormal lining of the bowel (microvillous inclusion disease) or abnormal movement of the bowel (Hirschprung's disease etc.)

Types of Transplant



Isolated Multivisceral

Mild liver disease



Combined En-Bloc

Severe liver disease



Children with intestinal failure are kept alive by intravenous nutrition given through tubes placed in big vessels in the neck (central venous catheters). Most children remain in hospital, but some children can have intravenous nutrition administered at home by their parents. Many children can survive in the long term on this treatment, but 20% of the children on home intravenous nutrition may develop life-threatening complications such as central venous catheter infections. Repeated infections and chemical injury because of intravenous nutrition can lead to progressive liver disease (intestinal failure associated liver disease). Some of these children can have progressive liver disease, thus making them more susceptible to infections, leading to liver failure.

Small bowel transplantation is a life saving option for children with these complications.

Worldwide, approximately 1,000 small bowel transplants have been performed since 1st April 1985 and at present there are 61 intestinal transplant programmes in 19 countries.

Depending on the severity of the liver disease, small bowel transplantation can be performed involving the small bowel alone or with other organs:

- small bowel alone — if the child only has mild liver disease
- liver and small bowel — if the liver disease is too severe
- multivisceral transplant (liver, small bowel, duodenum, pancreas, etc.)

Following small bowel transplantation, most children stop intravenous nutrition and start feeding within a few weeks.

It was some time before small bowel transplant became successful, but now with new anti-rejection drugs and innovative surgeries, 80% one-year survival is reported from some centres in the USA. The long-term survival figures are also improving with a five year survival rate of 50% – 60%.

Improved quality of life has been demonstrated in small bowel transplant recipients. A study in the USA in 10 to 16 year-old small bowel transplant recipients showed that the recipients rated their quality of life as equivalent to healthy children of the same age, although their parents remained more anxious than the parents of healthy children. Most of the children attended school and led a normal life, similar to other children of the same age.

The UK experience

Birmingham Children’s Hospital is the only centre in the UK to carry out small bowel transplantation. Over the past 15 years, 153 children have been assessed for small bowel transplantation. Of these children, 54 were recommended for transplant following a multidisciplinary assessment involving liver specialists, gastroenterologists, liaison nurses, dietitians, social workers, radiologists, anaesthetists, surgeons and physiotherapists. In the early days, fourteen have died on the waiting list because of infections and end stage liver disease and because we could not find donor organs in time. Our surgeons have pioneered the technique of transplanting liver and small bowel from adults into children (graft reduction).

Due to the use of the above technique, 26 children had small bowel transplantation and 17 children went home on

feeds, free from intravenous nutrition. The parents have informed us that the quality of life was much better after intestinal transplant.

To summarise with the advances in immunosuppression and increasing experience worldwide, survival following intestinal transplantation is improving and recipients are enjoying a good quality of life.

Intestinal transplantation is now an established option for those who cannot be managed successfully on total intravenous nutrition. In such cases, early referral to an intestinal transplant centre is strongly recommended.

A special thanks to CLDF for providing educational and travel grants to the team at the beginning of the programme.

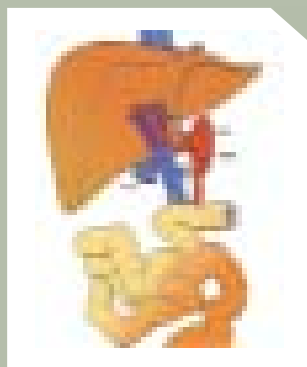
For more information about the programme at Birmingham Children’s Hospital, contact Girish Gupte, e-mail: girish.gupte@bch.nhs.uk.

Contributors: Gupte G, Beath S, Clarke S, Hart D, Hogg L, Gordon G, Kelly D: Liver Unit, Birmingham Children’s Hospital, B4 6NH.

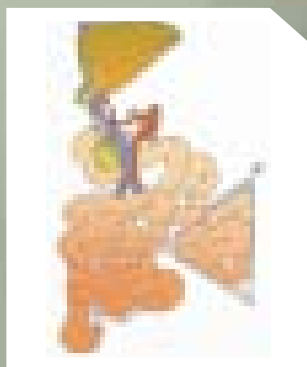
Supporting families and patients with intestinal failure associated liver disease

There is an increasing number of children with intestinal failure associated liver disease. We are aware that they and their families need support and information. CLDF has agreed to extend the support services to the family and young people and intends to establish a working group to develop literature. We hope this will start the process of meeting the needs of the families and young people. We would be happy to hear from families about the type of information they would find helpful and these will be taken to the working group meeting. Please write to Catherine at CLDF with your views.

Combined reduced Liver and Small Bowel transplantation



Combined



Reduced



Mohammed Khan

Nathan Eade, outpatient

