NICE National Institute for Health and Care Excellence

NICE guidance

Laparoscopic live donor simple nephrectomy

HealthTech guidance
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Your responsibility

This guidance represents the view of NICE, arrived at after careful consideration of the evidence available. When exercising their judgement, healthcare professionals are expected to take this guidance fully into account, and specifically any special arrangements relating to the introduction of new interventional procedures. The guidance does not override the individual responsibility of healthcare professionals to make decisions appropriate to the circumstances of the individual patient, in consultation with the patient and/or guardian or carer.

All problems (adverse events) related to a medicine or medical device used for treatment or in a procedure should be reported to the Medicines and Healthcare products Regulatory Agency using the Yellow Card Scheme.

Commissioners and/or providers have a responsibility to implement the guidance, in their local context, in light of their duties to have due regard to the need to eliminate unlawful discrimination, advance equality of opportunity, and foster good relations. Nothing in this guidance should be interpreted in a way that would be inconsistent with compliance with those duties. Providers should ensure that governance structures are in place to review, authorise and monitor the introduction of new devices and procedures.

Commissioners and providers have a responsibility to promote an environmentally sustainable health and care system and should assess and reduce the environmental impact of implementing NICE recommendations wherever possible.

Contents

This guidance replaces IPG57.

1 Recommendations

1.1 Current evidence on the safety and efficacy of laparoscopic live donor simple nephrectomy appears adequate to support the use of this procedure, provided that the normal arrangements are in place for consent, audit and clinical governance.

2 The procedure

2.1 Indications

2.1.1 Kidneys from live donors are considered more likely to be successful in treating endstage renal disease than those from cadaver donors.

2.1.2 The standard technique for retrieving kidneys from live donors is by open surgery. The aim of laparoscopic nephrectomy is to reduce donor morbidity and make the process more appealing to potential donors. It can be performed via a transperitoneal or retroperitoneal approach. The transperitoneal approach is preferred because it allows more laparoscopic working space, it makes it easier to remove the kidney and the incision is less painful.

2.2 Outline of the procedure

2.2.1 The procedure involves the insertion of laparoscopic instruments through the abdominal wall via small incisions, insufflation of carbon dioxide and removal of a kidney.

2.3 Efficacy

2.3.1 One systematic review and several non-randomised comparative studies were identified. The systematic review found no statistically significant difference between the laparoscopic and open procedures for graft function, graft survival and recipient survival, although there was a lack of long-term follow-up data. One study found recipient acute rejection in the first month to be 30% (33 out of 110) for the laparoscopic procedure and 31% (15 out of 48) for the open procedure. Donor hospital stay was generally shorter for the laparoscopic procedure; means ranged from 1.3 to 3.2 days for the laparoscopic procedure and 4.1 to 4.4 days for the open procedure. Laparoscopic donors generally returned to work earlier than donors undergoing the open procedure; means ranged from 2.1 to 3.9 weeks for

the laparoscopic procedure and 4.1 to 7.4 weeks for the open procedure. For more details, see the overview.

2.3.2 The Specialist Advisors did not raise any concerns regarding the efficacy of this procedure.

2.4 Safety

2.4.1 The risks of laparoscopic live donor simple nephrectomy appeared similar to those of open live donor nephrectomy. In a systematic review, donor complication rates were reported to be between 0% (0 out of 20) and 35% (23 out of 65) for open procedures, and between 5% (1 out of 19) and 20% (6 out of 30) for laparoscopic procedures; some studies did not report their open nephrectomy results for comparison. Recipient complications also appeared to be similar for both open and laparoscopic procedures, but these were reported even less often than the donor complications. In a systematic review, recipient ureteric complication rates were reported to be 3% to 6% for open procedures and 3% to 10% for laparoscopic procedures. For more details, see the overview.

2.4.2 The Specialist Advisors considered the main safety concerns to be bleeding, injury to nearby organs and conversion to open surgery.

3 Further information

Sources of evidence

The evidence considered by the committee is in the overview.

Information for the public

NICE has produced information for the public on this procedure. It explains the nature of the procedure and the decision made, and has been written with patient consent in mind.

Update information

Minor changes since publication

January 2026: Interventional procedures guidance 57 has been migrated to HealthTech guidance 30. The recommendations and accompanying content remain unchanged.

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Endorsing organisation

This guidance has been endorsed by Healthcare Improvement Scotland.