Recent NICE guidance of interest to surgeons

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Interventional procedures

Faecal microbiota transplant for recurrent *Clostridium difficile* infection (IPG485)

This guidance is about a conceptually simple procedure for a serious condition that can affect surgical patients. There is quite good evidence that it works.

The predisposing factors for *C difficile* infection and its potential to cause very serious illness are well known. The majority of patients respond to antibiotic treatment but some have refractory or recurrent infections.

The procedure involves introducing faeces into the patient from healthy donors. The word 'transplant' has become used to describe this procedure even though it is not a transplant in the usual sense of the word. Donors may be family members or unrelated people: the main aim is to use donors who live in the same environment as the patient (with a view to the enteric bacteria that their faeces are likely to contain). Donor faeces are diluted with water, saline, milk or other liquid. They are then strained to remove large particles and are introduced via a nasogastric or nasojejunal tube, by rectal enema or via a colonoscope. Patients may have a bowel lavage before receiving the donor faeces. The aim of the faecal microbiota transplant is to restore a healthy balance of bacteria.

A systematic review of 25 studies (289 patients) reported complete symptom resolution at one year in 91% of patients treated for refractory *C difficile* infections. A randomised controlled trial of faecal transplant versus vancomycin treatment (with and without bowel lavage) reported a cure rate of 81% for faecal transplant compared with 23% and 31% for the two vancomycin arms ($p < 0.001$). Two of the three patients who had persistent infection after faecal microbiota transplant were cured after a further treatment. Only one patient relapsed, compared with over half of the patients in each of the vancomycin arms. A non-randomised comparison of 43 patients reported no differences in success rates between faeces from related and unrelated donors or between fresh and frozen faeces.

Faecal microbiota transplants seem to be associated with little in the way of adverse events and none have been reported that were very serious. A few patients get belching and transient abdominal pains, and some report constipation for a few weeks afterwards. Enteritis has been reported very occasionally.

In considering the procedure, the Interventional Procedures Committee recognised that there may be certain people who consider the donation or receipt of faeces

unacceptable, for religious or other reasons. It also discussed the spectre of introducing infective biological agents (known or currently unknown) but there have been no reports of this occurring. When recommending 'normal arrangements' for the use of this procedure, it judged that this theoretical risk is outweighed by the facts that patients with recurrent *C difficile* may be very ill and that they have already failed standard treatments.

Insertion of a magnetic bead band for faecal incontinence (IPG483)

NICE has already published interventional procedure guidance on the use of this kind of technology for the prevention of gastro-oesophageal reflux disease (GORD).¹ That recommended use with 'special arrangements' and encouraged research, commenting that the procedure could be a useful addition to treatment options for patients with refractory GORD if it was shown in further studies to be effective and safe. A similar 'special arrangements' recommendation (for governance, informing patients during consent and audit/research) has been made for faecal incontinence. This was done on the basis of very limited evidence but mindful of the severe distress that faecal incontinence can cause and the fact that there may be few other treatment options. There is a specific recommendation to enter all eligible patients into the current Health Technology Assessment (HTA) trial (12/35/07) and to collect data on all other patients with a view to collaborative publication(s).

The guidance makes clear that this is a procedure that should only be done in units that specialise in the assessment and treatment of faecal incontinence. It can potentially be used for incontinence caused by a wide range of conditions. The procedure is performed under general anaesthesia, inserting a device of a chosen size around the anal canal via an anterior incision in the perineal body and tying its ends together to form a band. The band's interlinked titanium beads are held together by a weak magnetic force, which allows the beads to separate during defecation and then draws them together again, thereby preserving continence.

Non-randomised comparisons against sacral nerve stimulation (28 patients) and against insertion of an artificial sphincter (20 patients) showed similar improvements in continence scores and quality of life after a median follow-up duration of 18 and 8 months respectively. Two case series also reported favourable outcomes (total 38 patients).

Infection is a concern with any implant near the anus. In a case series of 14 patients, 2 devices were removed

while in another series, 5 of 16 patients had signs of infection that responded to antibiotics. Pain after implantation was reported in 31% of patients in one series (no details given) and specialist advisers stated that discomfort is recognised as being a problem in some patients. One report noted a band breaking.

NICE will review this guidance when the results of the current HTA trial are available.

Endoscopic thoracic sympathectomy for primary hyperhidrosis of the upper limb (IPG487) and for primary facial blushing (IPG 480)

These procedures are not new but NICE was notified because of concern about the occurrence of severe side effects. Some patients state that their lives have been ruined by the compensatory hyperhidrosis that can follow thoracic sympathectomy and they have pressed for an evaluation for a number of years. There were also many comments from patients during the public consultation about these procedures; almost all related to safety aspects. NICE decided to evaluate endoscopic thoracic sympathectomy for both hyperhidrosis and for primary facial blushing on the basis that there might be a different balance of safety and efficacy for the two indications.

The procedure is done under general anaesthesia, using a thoracoscope and with the lung partially collapsed to allow visualisation of the sympathetic chain in the region of the second and third ribs. A selected length of the chain is divided using diathermy, scissors or clips.

The efficacy of thoracic sympathectomy was supported by a number of series, some very large. Series of 9,988 and of 2,000 patients reported relief of palmar hyperhidrosis in over 95% at 3 and five 5 respectively, and another series, including 1,052 patients with hyperhidrosis, reported a 'satisfactory and lasting effect' in 85% at a mean follow-up duration of 15 years. A comparative study against botulinum toxin for hyperhidrosis showed that both treatments were efficacious but that sympathectomy was significantly better at one year. For facial blushing, a report of

831 patients documented very significant improvement of symptom scores ($p<0.0001$) after two years and the series with the 15-year follow-up period reported 'satisfactory relief' in 85% of 648 patients with facial blushing.

With regard to safety, a (non-systematic) review documented nine perioperative deaths, five as a result of bleeding during the operation. Compensatory hyperhidrosis was a common side effect, affecting 74–92% of patients to some degree, in three of the large case series. The mixed series with the 15-year follow-up period reported that 11% of patients had compensatory hyperhidrosis that was 'incapacitating' to the extent that they regretted having had the procedure, in the long term. Two series reported that 33% of patients had compensatory hyperhidrosis that was 'severe' or 'incapacitating' although the proportion of patients described as dissatisfied was lower in other reports (for example, 2% at 5 years in a series of 453 patients treated for hyperhidrosis). A variety of other complications were documented as occurring occasionally, including Horner's syndrome.

NICE guidance recommended that endoscopic thoracic sympathectomy may be used with 'normal arrangements' for both hyperhidrosis and facial blushing, based on the good evidence of efficacy in the long term and on the great distress that both conditions can cause. However, it was very explicit about the need for the most thorough information for patients regarding possible side effects (in particular, compensatory hyperhidrosis) and about the fact that symptoms are not always relieved. The recommendations stressed the need to ensure that patients being considered for the procedure have debilitating symptoms that have been refractory to other treatments. The guidance also emphasised the importance of training and experience in thoracic endoscopy.

Reference

1. National Institute for Health and Clinical Excellence. *Laparoscopic Insertion of a Magnetic Bead Band for Gastro-oesophageal Reflux Disease*. London: NICE; 2012.