

## Is FiLaC the answer for more complex perianal fistula?

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The ancient Greeks are often credited as the first to acknowledge the challenges of perianal sepsis and associated fistulae [1]. Indeed, 2500 years of enquiry have seen numerous procedures offered to patients; many burdened by their own inherent problems and none widely considered to represent optimal treatment. Modern-day anal fistula management can be complex and require a multidisciplinary input in Crohn's disease. The addition of radiological assessment to thorough clinical examination facilitates anatomical delineation, usually using Parks' classification. The most difficult fistulae are often those too high to be amenable to laying open, which has the best chance of healing. Whilst rarely a life-threatening condition, the disappointment of recurrent failure is difficult for patients, who may have to consider treatments which can impair sphincter function. One problem is the contentious issue of defining treatment success and/or fistula healing which are often synonymous.

The Societa Italiana di Chirurgia ColoRettaile (SICCR) recently published a position statement on perianal fistulae [2]. Amongst a variety of issues, they specifically addressed the use of Fistula Laser Closing (FiLaC) to ablate the fistulous tract, with or without internal opening closure, in 'complex fistulae'. The 2C recommendation was based on the literature prior to the recently published study by Wilhelm and colleagues in this journal [3], but they nevertheless highlighted the low morbidity and potential of

this procedure and that it warranted further investigation. A separate expert group from the UK looked specifically at perianal fistulae in Crohn's disease [4]. They sought to address a number of areas in perianal Crohn's disease and included details of surgical care in their questionnaire. Unfortunately, only 0.6% of surgeons across 32 centres cited experience of FiLaC reflecting limited uptake at present.

In this journal, Wilhelm and colleagues have reported on their long-term follow-up data using FiLaC in patients with diagnosed high fistulae [3]. FiLaC uses a radial emitting diode laser to obliterate the fistula with or without closing the internal opening. This study, currently the largest series, included 117 patients over a period of just under 5 years who had undergone clinical and radiological examination with endoanal ultrasound (EAUS). Both surgery and EAUS were performed by a single surgeon. The primary outcome measure was fistula healing, the definition of which has often proved to be a contentious issue in fistula-in-ano, many authors using follow-up which is too short or failing to use imaging to prove the absence of persistent occult tracts. By contrast, Wilhelm used a combined clinical and radiological endpoint with a strict definition. A fistula was considered to have permanently healed if at 1 year all symptoms had completely disappeared, there was no evidence of recurrence (or persistence) on clinical, proctoscopic and endosonographic examination, and there were no additional interventions required. A similar combined (but less stringent) clinical and radiological endpoint was recently used by Panes et al. in their study on stem cells in Crohn's anal fistula [5]. The use of combined endpoints and longer follow-up is a welcome development in fistula surgery research.

Interestingly, the authors used a further definition of success: primary success if the fistula fulfilled the healing

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criteria after a single FiLaC intervention and secondary success if the healing occurred after a repeated post-FiLaC intervention. The primary and secondary success rates were 64.1 and 88%, respectively. The only variable which influenced success was intersphincteric versus transsphincteric tracts based on the Parks classification. However, many of the comparisons tested included one much smaller group and are therefore at risk of type II error, including the question about the optimal method for closure of the internal opening. Whereas the length of the tract is thought to influence success with the fistula plug, the diameter of the tract may be important in FiLaC. The fixed penetration of the laser suggests that it may be less effective in the centre of a cavity, for example, or a wider section of tract. Magnetic resonance imaging (MRI) assessment of tract diameter prior to treatment may be an interesting variable for future analysis.

The median follow-up duration of 25 months in Wilhelm's study was sufficient to determine whether patients had recurred following FiLaC and clearly a secondary success rate of 88% is very promising. This is the longest follow-up of any series, and although previous reports have shown high rates of success (9 out of 11 patients [6]; 41 of 50 patients [7]), the follow-up has been limited to 12 months or less. The primary success rate, whilst not as impressive, mirrors that of many other sphincter-preserving therapies such as advancement flaps and ligation of the intersphincteric fistula tract (LIFT). But the approach of combining more than one technique may actually be the most useful finding. New techniques often combine several aspects which target different factors thought to lead to fistula persistence such as video-assisted anal fistula treatment (VAAFT) which, like FiLaC, uses an advancement flap technique to close the internal opening and disconnect the tract from the gut. Tract preparation with preceding abscess drainage, laying open of secondary tracts, seton insertion and then curettage of the tract prior to the named procedure, are features of most studies of sphincter-preserving procedures. Further investigation into these aspects including use of a seton and the need to close the internal opening are worth undertaking in their own right.

If one accepts the definition given by Wilhelm and colleagues, FiLaC is a credible option for patients who have failed previous treatments or have recurred in a short space of time. Given the higher success rate in intersphincteric fistulae, its use in simple fistulae may also be valuable, particularly in patients unwilling to countenance any risk of functional impairment.

The question of 'distalization' of the fistula is an interesting one. Many of the sphincter-preserving techniques are said to be advantageous partly because failure does not preclude any other techniques or lead to harm. The fistula plug may be an exception; some commentators have

concluded that the openings are made larger by its presence when failure occurs. Other techniques are said to lead to a more advantageous anatomy in failure. The recurrent fistula after failed LIFT may be intersphincteric, the transsphincteric component having healed. This may render the fistula more amenable to fistulotomy (or, given this report, to FiLaC). If FiLaC does indeed lead to a reduction in the height of the fistula, this may also have an impact on feasibility of subsequent lay open, or of LIFT, which is easier in lower fistulae. However, it is more difficult to hypothesise the mechanism for distalization than for the intersphincteric failure of the LIFT procedure; does the intersphincteric gland responsible for the fistula migrate? The distalization claim requires further description and in particular, MRI confirmation of the old and new locations of the tract.

Novel treatments must balance the risks of continence impairment and fistula recurrence. Specifically, surgeons (and patients) seek a genuinely sphincter-preserving procedure with a success rate higher than 50–65%, which is a barrier that remains essentially unbroken. There have been few reports of episodes of major incontinence after FiLaC and the rare episodes of minor incontinence reported may well be related to concurrent pathology or previous sepsis/surgery. Another important consideration is that there was no significant difference in patients with Crohn's-related pathology and those whose fistulas were presumed to have a cryptoglandular aetiology although the Crohn's group was too small for robust analysis. Certainly, the limited data so far suggest that FiLaC is an interesting and welcome addition to the surgeon's armamentarium to treat complex fistulae.

#### Compliance with ethical standard

**Conflict of interest** The authors declare that they have no conflict of interest.

**Ethical approval** Ethical approval is not required for this paper.

**Informed consent** For this type of study formal consent is not required.

#### References

1. Vigoni M (1985) History of the treatment of anal fistulas (introduction). *Acta Chir Belga* 85:307–311
2. Amato A et al (2015) Evaluation and management of perianal abscess and anal fistula: a consensus statement developed by the Italian Society of Colorectal Surgery (SICCR). *Tech Coloproctol* 19:595–606
3. A Wilhelm, A Fiebig, M Krawczak (2016). Five years of experience with the FiLaC<sup>TM</sup> laser for fistula-in-ano management: long-term follow-up from a single institution. *Tech Coloproctol* epub ahead of print

4. Lee MJ, Heywood N, Sagar PM, Brown SR, Fearnhead NS et al (2017) Surgical management of fistulating perianal Crohn's disease: a UK survey. *Colorectal Dis* 19:266–273
5. Panes J et al (2016) Expanded allogeneic adipose-derived mesenchymal stem cells (Cx601) for complex perianal fistulas in Crohn's disease: a phase 3 randomised, double-blind controlled trial. *Lancet* 388:1281–1290
6. Wilhelm A (2011) A new technique for sphincter-preserving anal fistula repair using a novel radial emitting laser probe. *Tech Coloproctol* 15:445–449
7. Ozturk E, Gulcu B (2014) Laser ablation of fistula tract: a sphincter-preserving method for treating fistula-in-ano. *Dis Colon Rectum* 57:360–364