

SURGERY OF COMPLEX PERINEAL FISTULAS: NEW TECHNIQUES AND TECHNOLOGIES

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The goal of treating perianal fistulas is the eradication of the abscess and fistula tracts connected to them by preserving the integrity of the sphincters and minimizing relapses. Traditional surgical techniques such as ***fistulectomy*** (exeresis of the fistula tract), ***fistulotomy*** (opening of the fistula tract by means of “Laying open” with scalpel or with seton) and ***flaps*** (strips of anal skin or rectal mucosa used to close the internal fistula orifice) were for a long time the only option of treatment but now new procedures and surgical techniques have been proposed especially for the treatment of complex perianal fistulas. The term of “***complex perianal fistula***” refers to fistulas that have the main tract for more than 30% in the external sphincter, those that have more ramifications, those that have an anterior position in females, those with relapses, those caused by Crohn’s disease, those in patients that undergo irradiation of the perineum and those originated in cases of pre-existing faecal incontinence¹.

GLUES

N-butyl-2-cyanoacrylate and methacryloxysulfolane (e.g. Glubran 2[®] - GEM. s.r.l.) - Bovine serum albumin and glutaraldehyde. (BioGlue[®] - CryoLife, Inc.) - Fibrin glue (e.g. Tissucol Duo[®], Baxter)

The use of glues was proposed as a sphincter saving technique: injecting directly into the fistula tract, the glues becomes a sealer that guarantees a strong adhesion of tissues and an antiseptic barrier. In addition, fibrin glue allows the formation of a clot that helps the healing of the fistula. Their use is limited by the necessity of a complete cleansing of the fistula tract in order to avoid the explosion of sepsis and, moreover, is not indicated in the case of intolerance towards the glues’ components. The two major scientific papers published on the use of Glubran, report a percentage of healing of 90.2% (19/21 patients)² after eighteen months from treatment and 67.6% (23/24 patients)³ to an average follow up of 34 months (7/14 patients) and a medium follow up of 13.92⁴ months. Finally, numerous papers published on the use of fibrin glue report extremely variable percentages of success ranging between 0% and 80%⁵⁻⁶.

PLUGS

They are devices positioned in the fistula tract and anchored by a stitch in the internal orifice. Thanks to the porous structure they act as a scaffold that supports fibroblasts cells that allow the closure of the passage by producing new tissue.

The draining capacity of the pores allows the use of plugs to treat also infected fistulas. However, their use does not seem the best for short and anterior fistulas tract as in anus-vaginal ones because the plug may be easily displaced. Among the most well known there is SURGISIS AFP (Cook medical, Inc, Bloomington, IN) made up of lyophilised bio-absorbable porcine intestinal submucosa. The percentage of success is very variable and fluctuates between 14% and 84%⁷.

LIGATION OF THE INTERSPHINCTERIC FISTULA TRACT (LIFT)

It is a new sphincter saving technique in surgery that consists in isolating, performing a ligation and dividing the fistula tract at the level of the inter-sphincteric space as to promote the healing of the fistula avoiding the bacterial contamination. The percentage of success reported in literature is between 68% and 94.4%. Although very promising, currently appropriately long term follow-up is missing⁸⁻¹⁰.

VIDEO ASSISTED ANAL FISTULA TREATMENT (VAAFT)

In this technique a *fistuloscope* is used: it is a thin optical instrument that allows the exploration of the fistula tract to find possible abscesses, secondary tracts and to identify the internal orifice. The diagnostic phase is followed by an operative one of diathermic burning and *brushing* (cleaning by scraping) of the epithelium lining the tract, closure of the internal orifice with a stapler or with a handmade suture and, finally, applying a cyanoacrylate glue inside the tract to strengthen the closure of the internal orifice. The Author reports a percentage of healing in the following year after treatment equal to 87.1%¹¹.

STEM CELLS

With this term we refer to adipose-derived stem cells extracted with liposuction¹² or of mesenchymal stromal cells extracted from the autologous bone marrow¹³. This technique is still being experimented. The cells are injected in the fistula tract obtaining promising results in closing fistulas refractory to medical treatment in patients affected by Crohn's disease.

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