

Current Trends in Management of Fistula-in-Ano: Can We Minimize Recurrence?

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Perianal fistula has been associated with significant morbidity since the recorded history. Hippocrates made reference to surgical therapy for fistulous disease in his scripts. Abul Qasim Al-Zahrawi (Albucasis) described cautery and curettage as the treatment for peri-anal fistula in his famous book *Al-Tasrif*. Besides other local remedies, his method of management continued for centuries to come. The pathophysiology, anatomical description, classification and treatment modalities for peri-anal fistula were described in the 19th and 20th centuries. Parks¹ described anatomical classification of perianal fistula which is still widely used in current practice. Perianal fistula, like other benign anorectal conditions, has a well-recognized incidence of fecal incontinence and recurrence after surgical treatment. Therefore, all recent advances are geared towards better evaluation and effective management of the fistula.

Factors identified for recurrence of fistulae are technical difficulty in pre-operative evaluation, missing the right track or additional tracks during surgery, complex type of fistula, horseshoe extension, lack of identification or lateral location of the internal fistulous opening, previous fistula surgery, the surgeon performing the procedure, lack of treatment of aetiological factors or pathology and lack of proper follow-up.²

Diagnosis of fistula is clinical. The management of fistula, however, depends upon its proper evaluation which includes finding the direction of track(s) as well as number and location of internal opening, whether high or low, in relation to the anorectal ring. In a systematic review, the relative risk of anal fistula recurrence was 20-fold higher in patients in whom the internal opening was not identified compared to those with the internal opening identified.³

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Pre-operative clinical evaluation can identify the indurated track from the external opening going to the anal canal. However, it is usually unsuccessful in determining the internal opening. Endorectal ultrasonography (ERUS) is very effective in mapping the fistulous track. It doubles the identification rate as compared to clinical evaluation and thus can help decrease the risk of recurrence.^{4,5,6} Recently it was found that combining hydrogen peroxide instillation into the track followed by ERUS significantly improves the mapping and direction of track or tracks, if multiple.⁷

MRI has been a recent modality in evaluating perianal fistulae. It gives a road map for the whole track or tracks and can delineate especially the site of internal opening as well as indicate the secondary tracks, if any. MRI has almost replaced a now obsolete fistulogram that has a very poor yield in such cases.^{8,9} All other investigation modalities are compared to MRI for evaluation of peri-anal fistulae. Per-operative proctoscopy aided by dye instillation can help identify the internal opening in more than 90% of cases. It is author's practice to use hydrogen peroxide instead of methylene blue as the latter stains the whole canal making it difficult to repeat the dye test while the former can be easily wiped off for this purpose.

Traditionally the low fistula is relatively simple to treat by fistulotomy (laying open of the track) or fistulectomy (removal of the whole track). The incidence of recurrence is likely to be high with high and complex types of fistulae.¹⁰⁻¹³ Therefore, more concerted efforts are required in treating these types of fistulae. Use of seton is a traditionally favoured method for treating high fistulae, and those associated with inflammatory bowel conditions such as Crohn's disease, to minimize the incontinence problem.^{14,15} More complex surgical procedures in the form of local advancement flaps have met moderate success.¹⁶ Recently use of fibrin glue and other bio-prosthetic plugs, is becoming popular, as minimally invasive technique. These plugs are very well tolerated with minimum chance of incontinence. However, the cure rate varies from 35-87%. Current knowledge suggests that the anal fistula plug is a good choice for first-line management of complex

fistula-in-ano, but further evaluation is needed in the form of multicentre randomized controlled studies.^{17,18} Another discovery is administration of expanded augmented stem cells (20 to 60 million cells) in combination with fibrin glue that has been shown as an effective and safe treatment for complex perianal fistula and appears to achieve higher rates of healing than fibrin glue alone.¹⁹

Minimally invasive technique in the form of video-assisted fistula surgery using a specially designed fistuloscope, for complex fistulae, has been shown with promising results by individual surgeons in their booklets and web-based articles.²⁰ In this technique the fistula tract is approached through fistuloscope and fulgurated with uni-polar electrodes. The internal opening is closed and the tract is let to heal without any major cutting of sphincter, therefore minimizing the risk of recurrence. It is possible that, in future, it may become a procedure of choice for complex fistulae. However, no randomized studies are yet available for their long-term results especially recurrence.

A fistula usually follows a peri-anal abscess. The abscess is conventionally drained without fistulotomy to avoid incontinence. The formal fistula surgery is electively performed later in the second stage. However recent reports have challenged this theory and single-stage drainage as well as fistulotomy has been successfully done without increased incidence of incontinence. However, there is higher incidence of recurrence in such cases as compared to two-stage procedure.²¹

Whatever surgical treatment is undertaken in dealing with the fistulae, the success of the treatment depends upon carefully finding the whole track or tracks and especially the secondary tracks, if any. The patients should have regular follow-up with the treating team to oversee proper closure of the granulating cavity. A careful watch should be done to detect a prematurely closing wound on the surface leaving the unfilled underlying cavity that may reform a residual track. The author has made it a point in treating these fistulae to continue following up the closing cavities after fistulectomy for at least six weeks. In quite a number of cases a prematurely closing track was picked up and reopened to help granulate and cover up from the depth.

The management of perianal fistula remains surgical in most centres of the world but newer methods of minimal invasive treatment are likely to minimize the issues of operative complications such as fecal incontinence and, at the same time, achieve higher

cure rates comparable to surgical excision.

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