INTRODUCTION

Fistula is an abnormal connection between an internal opening in the anal canal and an external opening in the perianal skin. Commonest causes are Crypto glandular infection, Crohn’s disease, HIV, Malignancy & Tuberculosis. Management of fistula has changed over the millennia from spadefooting to sphincter saving procedures. Safe and effective treatment of fistula depends on accurate assessment of fistula. In accordance with Park’s classification, fistula is of four basic types - intersphincteric, trans-sphincteric, suprasphincteric and extrasphincteric. Kronbrog’s comparative study proclaims Fistulotomy better than Fistulectomy. Late complications of Fistulotomy are recurrence and impairment of continence. Ayurvedic medicated setons have been described for anal fistula in sushruta samhita. The use of seton could either be loose, cutting or chemical through the sphincter muscle. Incontinence with cutting seton can vary from 0 to 67%.

AIM: Anal fistula is an abnormal connection between two epithelial surfaces. The treatment strategies of anal fistula have been described in most ancient medical literatures. By virtue of causing minimal injury to the sphincters and preserving their function; minimal invasive approach is preferred over traditional methods in the management of anal fistula. The aim of our study was to compare different sphincter saving techniques like fistula laser closure (FiLaC) and trans-sphincteric intersphincteric fistulotomy (DLPS) with a new technique of distal laser and proximal fistulotomy (DLPF) to cure the patient with minimal morbidity.

METHOD: A total of 26 patients were taken for Distal Laser Proximal Fistulotomy from April 2019 to June 2019. All patients were operated under spinal anaesthesia in lithotomy position. Patients having either primary or recurrent intersphincteric and trans-sphincteric fistula were taken for surgery. Fistulotomy with marsupialization was done till anal verge and the distal tract was laser ablated. The internal opening including mucosa and submucosa was excised till the fibres of internal sphincter were visualized. The procedure was carried out in those patients where the probe could be negotiated from external opening upto the internal opening.

RESULTS: A total of 114 Patients with anal fistula were operated with sphincter saving techniques from April 2017 to October 2019. Patients who had undergone simple Fistulotomy with marsupialization have been excluded in the study. 42 patients were taken for fistula laser closure (FiLaC), out of which 7 patients had recurrence with success rate of 84%. 46 patients were taken for Distal Laser Proximal Sloft (DLPS), out of which 3 patients had recurrence with success rate of 93.5%. Remaining 26 patients were taken for Distal Laser Proximal Fistulotomy (DLPF) out of which only 1 patient had recurrence so far with success rate of 96%. The median operation time was 25 (15-35) min. Mean age for males and females was 45 and 38 years respectively. No intra-operative complications were reported. Median duration of follow up was 5 months. The male female ratio was 24:2 respectively. VAS score ranged from 0-1 with only one patient having VAS score of 2. No patient reported incontinence postoperatively.

ABSTRACT

A COMPARATIVE STUDY WITH OTHER SPHINCTER SAVING PROCEDURES

DISTAL LASER PROXIMAL FISTULOTOMY- A NEW SPHINCTER SAVING TECHNIQUE

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ARTICLE INFO

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anal fistula in 1991. Biologic fistula plugs, xenograft, allograft have been employed in treatment of fistula with mixed results. Endorectal advancement flap has advantages over other strategies to treat fistula. The success rate after flap vary widely and the mean time of recurrence range from 8 weeks to 9 months. These considerations have led to the development of minimal invasive procedures. DLPS is another sphincter saving procedure. The aim of the study is to provide an overview of the new sphincter saving technique.

Procedure: Antibiotics were administered to the patients half an hour prior to the surgery. Patients were operated under spinal anaesthesia in lithotomy position. Half cut proctoscope was introduced. The internal opening was identified by introducing hydrogen peroxide from the external opening. Once the internal opening was identified gentle probing of the fistula tract was done with the probe being brought out of the internal opening. The internal opening along with mucosa and submucosa was excised. The tract was laid open by Fistulotomy up to the anal verge. Marsupialization was done. The distal tract was laser ablated. The fistula tract was curgetted. Pus was sent for culture and sensitivity. Necrotic material was sent for histopathology. External opening was widened for irrigation purposes. Patient was discharged the next day.

DISCUSSION

The aim of treating fistula by minimal invasive techniques is to prevent anal incontinence irrespective of the extent of the sphincters involved. As per ASCRS guidelines the principle of minimal invasive procedure for fistula in ano is obliteration of internal opening along with epithelialized fistula tract without sphincter division. Hence, the goal in treating fistula is to eliminate the septic foci and any associated epithelialized tracts with the least amount of functional derangement. For most appropriate, treatment, the etiology should be well defined. Healing rates may vary by the presence of Crohn’s disease or any other associated etiology.

While treating fistula, it is very important for a surgeon to know the anatomy of anal canal and judge accordingly, as anatomy truly beget semiology. Non-specific infections attribute to obstruction of a crypto glandular gland. The anal crypts reside at the base of columns of morgagni and are 10 – 12 in number. Approximately half of all crypts have associated anal glands. About 80% of these anal glands are located in the submucosa. Role of anal glands is to lubricate the anal canal for smooth passage of stool. If these glands become clogged with faecal matter and get infected by bacteria, anal abscesses are formed. These abscesses become fistula. Abscess represent an acute stage where as fistula represents a chronic pathology.

Considering the anatomical concepts during DLPF, the internal opening is excised including submucosa and mucosa, thus eliminating the site of infection. The tract from internal opening to anal verge is laid open by Fistulotomy with marsupialization. The addition of marsupialization is advantageous in accelerating wound healing by reducing the size of wound, preventing the faecal matter from entering the space below submucosa and mucosa, and maintaining hemostasis. The distal tract is laser ablated by using a diode laser of wavelength 1470 nm. DLPS is suitable for treating tract of more than 4 cm in length. Moreover the pain VAS score is comparatively lower in DLPS. Out of 26 patients only 1 patient had VAS score of 2.

The closure of internal opening with vicryl 2-0 in the FiLaC procedure performed by us did not give the desired results as published in the data on FiLaC so far. Subsequently, DLPS was tried where the internal opening was closed with vicryl 2-0 and the whole distal tract was isolated and laser coagulated. The results were promising but recurrence still prevailed. In this cohort of patients we have tried to demonstrate the practicability of this new procedure (DLPS) in an attempt to achieve better initial results, superior to the results reported from FiLaC and DLPS performed by us previously (Chart 1).

RESULTS

A total of 114 Patients with anal fistula were operated for sphincter saving techniques from April 2017 to October 2019. Patients having simple Fistulotomy with marsupialization have been excluded in the study. 42 patients were taken for fistula laser closure (FiLaC) out of which 7 patients had recurrence with success rate of 84%. 46 patients were taken for Distal Laser Proximal Splt (DLPS) out of which 3 patients had recurrence with success rate of 93.5%. Remaining 26 patients were taken for Distal Laser Proximal Fistulotomy (DLPS) out of which only 1 patient had recurrence so far with success rate of 96%. The median operation time was 25 (15-35) min. Mean age for males and females was 45 and 38 respectively. No intra-operative complications were reported. Median duration of follow up was 5 months. The male female ratio was 24:2 respectively. VAS score was 0-1 with only one patient having VAS score of 2. No patient reported incontinence postoperatively.

Table 1 Patient and fistula characteristics of patients Undergoing the FiLaC procedure
Table 2 Patient and fistula characteristics of patients Undergoing the DLPS procedure

<table>
<thead>
<tr>
<th>Number of Patients</th>
<th>46</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender (M: F)</td>
<td>40:6</td>
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<tr>
<td>Age (Years)</td>
<td>45 (25-85)</td>
</tr>
<tr>
<td>Type of Fistula</td>
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<tr>
<td>Intersphincteric</td>
<td>35</td>
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<td>Low Transphincteric</td>
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<tr>
<td>Superficial</td>
<td>1</td>
</tr>
<tr>
<td>Extra Sphincteric</td>
<td>1</td>
</tr>
<tr>
<td>Previous Fistula Surgery</td>
<td>6</td>
</tr>
<tr>
<td>Recurrence</td>
<td></td>
</tr>
</tbody>
</table>

Table 3 Patient and fistula characteristics of patients Undergoing the DLPF procedure

<table>
<thead>
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<th>16</th>
</tr>
</thead>
<tbody>
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</tr>
<tr>
<td>Age (Years)</td>
<td>42 (25-75)</td>
</tr>
<tr>
<td>Type of Fistula</td>
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<tr>
<td>Intersphincteric</td>
<td>13</td>
</tr>
<tr>
<td>Low Transphincteric</td>
<td>1</td>
</tr>
<tr>
<td>Superficial</td>
<td>1</td>
</tr>
<tr>
<td>Extra Sphincteric</td>
<td>0</td>
</tr>
<tr>
<td>Previous Fistula Surgery</td>
<td>1</td>
</tr>
<tr>
<td>Recurrence</td>
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</tr>
</tbody>
</table>

CONCLUSION

Distal laser proximal Fistulotomy is an effective minimal invasive procedure with respect to clinical effectiveness and the maintenance of continence. DLPF may represent as first line treatment for patient with anal fistula. Long term results are needed to assess its efficacy as compared to other minimal invasive procedures.

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