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Ligation of Intersphincteric Fistula Tract Technique (LIFT) as a Management of Transsphincteric Anal Fistula

A Thesis by

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List of Abbreviations

AFP	Anal Fistula Plug
ASCs	Adipose-Derived Stem Cells
ATZ	Anal Transitional Zone
<i>B. fragilis</i>	<i>Bacteroides fragilis</i>
BC	Before Christ
cm	centimetre
CT	Computerized Tomography
DIFA	Dermal Island Flap Anoplasty
<i>E. coli.</i>	<i>Escherichia coli</i>
EAS	External Anal Sphincter
EFO	External Fistula Opening
ERAF	Endoanal Advancement Flap
etc.	Et cetera
EUA	Examination Under Anesthesia
EUS	Endo-Anal Ultrasound
GRADE	Grades of Recommendation, Assessment, Development and Evaluation.
HIV	Human Immunodeficiency Virus
IAS	Internal Anal Sphincter
Incon.	Incontinence
LIFT	Ligation of Intersphincteric Fistula Tract
Max	Maximum
Min	Minimum
mm	Millimeter
MR	Magnetic Resonance
MRI	Magnetic Resonance Imaging
PPV	Positive Predictive Value
Recur.	Recurrence
STIR	Short Tau Inversion Recovery
T(n)W	T(n)-weighted, and T is a Time constant.
VAAFT	Video-Assisted Anal Fistula Treatment
X²	Chi square

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Introduction

The word fistula originated from Latin (pipe, flute, fistula), plural is fistulas or fistulae.¹ Anal fistula, fistula-in-ano or the sometimes called perianal fistula is a hollow tract lined with granulation tissue, connecting a primary opening inside the anal canal to a secondary opening in the perianal skin. Secondary tracts may be multiple and can extend from the same primary opening.²

References to fistula-in-ano date to antiquity. Hippocrates made reference to surgical therapy for fistulous disease. Abul Qasim Al-Zahrawi (Albucasis) (936–1013) described cautery and curettage as the treatment for perianal fistula in his famous book *Al-Tasrif*. Besides other local remedies, his method of management continued for centuries to come.³ In 1376, the English surgeon John of Arderne (1307-1390) wrote *Treatises of Fistula in Ano; Haemorrhoids, and Clysters*, which described fistulotomy and seton use. Historical references indicate that Louis XIV was treated for an anal fistula in the 18th century.²

In the late 19th and early 20th centuries, prominent physician/surgeons, such as Goodsall and Miles, Milligan and Morgan, Thompson, and Lockhart-Mummery, made substantial contributions to the treatment of anal fistula. These physicians

offered theories on pathogenesis and classification systems for fistula-in-ano^{4,5}

Since this early progress, little has changed in the understanding of the disease process. In 1976, Parks refined the classification system.

The prevalence rate of fistula-in-ano is 8.6 cases per 100,000 population. The prevalence in men is 12.3 cases per 100,000 population, and in women, 5.6 cases per 100,000 population. The male-to-female ratio is 1.8:1. The mean age of patients is 38.3 years.⁶

Fistula-in-ano is nearly always caused by a previous anorectal abscess. Anal canal glands situated at the dentate line afford a path for infecting organisms to reach the intramuscular spaces. The cryptoglandular hypothesis states that an infection begins in the anal gland and progresses into the muscular wall of the anal sphincters to cause an anorectal abscess. Following surgical or spontaneous drainage in the perianal skin, occasionally a granulation tissue-lined tract is left behind, causing recurrent symptoms. Multiple series have shown that the formation of a fistula tract following anorectal abscess occurs in 7-40% of cases.^{7,8}

Other fistulas develop secondary to trauma, Crohn disease, anal fissures, carcinoma, radiation therapy, actinomycoses, tuberculosis, and Chlamydial infections.²

Diagnosis is clinical and it is aided by imaging techniques like fistulography, endoanal/endorectal ultrasonography, MRI, CT scan and Barium enema/small bowel series.

Over the centuries the probing of the fistula tract was the procedure of choice for final identification of its anatomy and planning the treatment. Laying open a fistulous tract (fistulotomy) was the treatment of choice.⁹ Use of seton is a traditionally favored method for treating high fistulae, and those associated with inflammatory bowel conditions such as Crohn's disease, to minimize the incontinence problem. More complex surgical procedures in the form of local advancement flaps have met moderate success.³

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.³

Over the last 30 years, many authors have presented new techniques and case series in an effort to minimize recurrence rates