

Chronic Cryptoglandular Anal Fistulas: Surgical Outcomes; A Retrospective Case Control Study In 148 Patients with No Risk Factors for Recurrence

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Abstract

Background: The success rate of surgery for anal fistulas in the literature is variable, ranging between 30-90% due to differences in etiology, risk factors for recurrences and variety of surgical and innovative techniques used in therapy of anal fistulas.

Aim: We try to evaluate the surgical outcomes in patients without any known risk factor for recurrence.

Materials and Methods: A retrospective study with 148 patients was performed. Fistulas were classified according to: Parks system, the modified Parks's and the St James's University Hospital system. MRI, TRUS and EUA were the most useful examinations. The age, duration of symptoms, location of the fistula according to the transvers anal line, the grade of complexity of AF were studied. Only patients with cryptoglandular anal infection were enrolled excluding patients with acute, subacute phase of inflammation and risk factors for recurrence. Operations performed in treatment of AF were registered. Various parameters studied underwent statistical analysis; Student t test and chi-square or Fisher exact test were used for comparisons between continuous and categorical data respectively

Results: 148 patients (112 males, 36 females, age range 21-74yrs, mean age 44±13, male to female ratio 3.1/1) were studied; 52(52/148, 35%) with simple and 96(96/148, 65%) with complex fistulas. MRI was necessary for classification of anal fistulas and identified the internal opening of fistula in 134 patients (134/148, 93%) and in 14 inconclusive cases was identified by TRUS. LIFT was performed in complex fistulas and low intersphincteric fistulas in 102 patients (102/148, 68.6%). Fistulotomy in 41(41/148, 27.7%) with simple linear intersphincteric fistulas and laser therapy in 5(5/148, 3.4%) with simple low intersphincteric fistulas. A successful surgical outcome was achieved in 51 patients with simple (51/52, 98%) and 91(91/96, 94.8%) with complex fistulas. 6 recurrences were detected (6/148, 4.05%).

Conclusion: Chronic anal fistulas, in selected patients present postoperative healing rates at 98% and 94.8% for simple and complex fistulas respectively and recurrence rate at 4.05%. The most common operations were LIFT and fistulotomy.

Keywords: anal; fistulas; simple; complex; cryptoglandular; MRI; TRUS; recurrence.

Introduction

Anal fistula (AF) is a chronic condition and surgery is the only definitive treatment. AF is an abnormal connection between anorectal canal and

perianal skin.[1] AF is a remnant of an anal abscess drained spontaneously or by surgery, consisting of three apparent anatomic areas; an external opening at the anal-perianal area, an internal opening into the ano-rectal canal and a fistulous tract with various length and route affecting the

anorectal canal, the sphincter system and the peri-anal anatomical areas. The majority of anal abscesses are explained by the cryptoglandular theory of infection of the anal glands; this is a very old theory still valid currently, but the pathogenesis is quite obscure and under study [2, 3] and this infection seems to be not influenced by the use of antibiotics [4]. Cryptoglandular AF represents 75% of all AF [5]. Secondary etiologies in anal abscess-fistula formation are inflammatory bowel disease, radiation of the anorectal canal, anal fissure and trauma. The second most common reason for fistula formation, after anal cryptoglandular infection, seems to be Crohn's disease (CD)[6]; Complex inflammatory mechanisms lead to fistula formation: AF are the most common fistulas in CD, affecting 17-50 % of patients with CD. We focus our interest in the present study in cryptoglandular AF where the surgical management is difficult, a plethora of new surgical operations and innovative techniques are available for the treatment of AF; In a recent systematic review based in studies assessing the treatment of cryptoglandular anal fistula, there was heterogeneity in outcome selection, definitions and measurement instruments used in interventional studies [7], making difficult the comparison of various methods used in the treatment of AF and so the superior technique of therapy is difficult to choose. To date sphincter saving procedures and many novel sphincter-sparing techniques are used in the treatment of anal fistulas. SAF present excellent surgical outcomes due to simplicity of AF, with healing postoperative rates more than 90% treated by fistulotomy or other sphincter sparing techniques [8]. In complex fistulas the success rates of surgical methods vary in literature from 30% to 90%, and many sphincter saving procedures are used; LIFT [9], VAAFT [10], Laser Closure Therapy [11], Photodynamic therapy [12], Advancement flaps [13], glue sealants [14], plugs in fistula [15] are the most common procedures in use. Several risk factors are described as linked with the failure of surgery, recurrence, and the need for reoperation. The most important are the presence of a high complex fistula, an internal opening of the fistula not found and horse-shoe fistulas [16,17].

To date, there are no guidelines on the choice of the preferable surgical technique for AF and surgical management is still challenging. The study of fistula characteristics and the correct classification are the key points for optimum surgical management; the goal of surgery is double: firstly, to remove or destroy the fistulous track, and secondly to avoid any iatrogenic sphincter damage, and the resulting a postoperative anal sphincter dysfunction and incontinence.

At the present study we try to estimate the efficacy of surgery in selected patients with chronic anal fistulas, apparently of cryptoglandular etiology without risk factors for recurrence.

Materials and Methods

Study design:

A retrospective case control study of 148 patients treated by surgery for chronic AF, the last four years was performed. Demographics, the past history, physical anal examination, MRI and EUA data were collected from all patents. All patients had fistula of cryptoglandular origin with duration of symptoms more than 6 months after the drainage of an anal abscess. Patients with clinical or imaging signs of acute or sub-acute inflammation in anal and perianal anatomical areas as abscesses or fluid collections were excluded from analysis. Patients with simple or complex fistulas and secondary tracks to suprasphincteric, supralelevator space or in ischiorectal fossa, as those with non-cryptoglandular etiology of the AF were also excluded; inflammatory bowel diseases, a no-vaginal fistulas, AF after chemo-radiation of the anorectal canal, prostate and perineum, horse-shoe fistulas or fistulas due to anal fissure, immunosuppressive patients, AF due to anorectal cancer, patients with recurrent AF, incontinence due to fistula or other reasons were excluded from analysis. All patients were operated for the first time for AF. [16,17]

Study Variables and Techniques

Demographics, the past history of the patient, clinical symptoms and examination of the anal canal by finger examination and anoscopy was performed in all patients. The external opening of the AF at the anal-perianal skin was detected by the external macroscopic examination of the anal and perianal skin. In inactive AF a careful probing in eventual external opening (skin deepening) by a thin metal probe, reveals finally the external opening of the AF and its peripheral segment. MRI of the ano-rectal canal with fistula protocol was performed in all patients, obtaining oblique axial and coronal images helpful in classification of anal fistula [18], determining also the internal fistula opening. TRUS had minimal use in our patients studied despite the method is easily performed (available in most anal surgery departments); the method to date is overlapped by MRI findings; in our patients was performed only in few cases, when the MRI findings were inconclusive for the level of the internal opening of AF. [19,20]

According to the transverse anal line all fistulas were classified as anterior or posterior anal fistulas. The real classification regarding the characteristics of fistula as length, route, complexity and participation of anal sphincter system in the formation of AF was based in MRI findings. We also used two clinical systems for the classification of AF; the Parks AG et al. classification system [21], where the intersphincteric, transsphincteric, extrasphincteric and suprasphincteric AF are the main AF, and the recently modified Parks system classification, where four types of AF exist[22]: Parks type1=intersphincteric fistula, Parks type 2=transsphincteric fistula, Parks type 3=suprasphincteric fistula, Parks type 4=extrasphincteric fistula with internal opening at rectum, the late system also includes more SAF, as superficial/submucosal fistulas. Park's type 4 AF, were not included in our study, as they are not of cryptoglandular etiology, presenting a more difficult and challenging surgical management. In MRI classification system for AF, we used the St James's University Hospital classification system (SJUH), [23] describing 5 grades of AF complexity, with predictive value of MRI for the postoperative outcomes: grade 1=simple linear intersphincteric fistula, grade 2=intersphincteric fistula with abscess or secondary tracks, grade 3=transsphincteric fistula, grade 4=transsphincteric fistula with abscess or secondary track within the ischiorectal fossa, grade5=supralelevator and translevator AF.

Examination of the anorectal canal under anesthesia (EUA) was performed in all patients; this is an important step for decision making and further surgical management of the AF. During EUA should be evaluated; In simple fistulas: a) the position of the external opening; an external opening at the anal verge, reveals a simple, low length fistulous track, terminating at the level of dentate line and an external opening inside of the anal verge reveals a simple superficial/submucosal fistula, b)It is the optimal procedure to detect the internal opening by careful probing of the fistulous track from the external opening up to the dentate line, where the internal opening is located. The probing of SAF, is easy and a low length fistulous track no more than 1.5-2cm is found. In CAF an incomplete probing of the external opening (outside and apart from the anal verge) and the peripheral fistulous track, passing through ischiorectal fossa, with a fistulous track more than 2cm, reveals a complex transsphincteric, suprasphincteric or supralelevator AF, any more and translevator AF. An incomplete inta-anal probing of the internal opening and the initial segment of the fistulous track, shows the location of LIFT procedure, which was performed in CAF. This internal opening may be identified preoperatively by MRI or TRUS. Before probing the fistula and during anoscopy the injection of different fluids from the external opening, using a syringe with vein catheter reveals many times the internal opening in anoscopy. The exact location of the external opening anteriorly or posteriorly of the transverse anal line is crucial for the probing of fistulous track: applying the Salmon and Goodsall rule, the

location of the internal opening may be predicted; this rule seems to be valid in most cases, at least in cryptoglandular AF, anterior fistulas are easily probed presenting an direct track, from the external opening to the anterior dentate line, and they are more difficult in management as they are obviously complex, while posterior AF from the external opening, follows a curved route terminating at the midline of the posterior dentate line. c) anal surgeon, cutting the proctoderma between the internal and external opening of the AF probed, mainly in SAF, may estimate the amount of sphincter system involved in fistula formation and mainly the participation of the external sphincter in fistula formation, thus may decide a fistulotomy or a saving sphincter surgical technique. [24]

According to preoperative clinical examination of the anorectal canal, MRI and EUA, patients were classified in two groups: a)patients with SAF were subdivided in two subgroups; those with simple intersphincteric linear fistulas treated by fistulotomy, and those with low intersphincteric fistulas containing an amount of external sphincter less than 30% treated by LIFT or laser therapy , b)patients with CAF were sub grouped in 3 subgroups; a) transsphincteric AF with affected sphincter system and route of the fistulous tract in ischio-anal/ischio-rectal fossa, b)suprasphincteric AF and c)supralelevator AF. All complex fistulas were treated by peripheral fistulectomy and LIFT.

Patients with recurrences after surgery were registered as well as the reoperations. As recurrence was defined a new fistulous track at least 6 months after surgery diagnosed in clinical follow-up with a new anorectal MRI (real recurrence and not persistence of local cryptoglandular inflammation). [16, 17]

All patients were operated in ODS clinic, under general anesthesia, the

Age	44±13 years
Males / Females	112 (75.7%) / 35 (24.3%)
Duration of symptoms	9±4 months
Posterior anal fistula	134 (90.5%)
Anterior anal fistula	14 (9.5%)

Table 1: Demographics, main clinical features of Anal Fistulas, location of fistulous tract.

Finger ano-rectal examination (in physical examination and not during EUA) was unable to localize the internal fistula opening in most cases; as patients were in a late phase of cryptoglandular inflammation, local induration, revealing the eventual location of the internal opening was found only in 8 patients (8/148, 5.4%), finger examination is strongly recommended as it is cheap, rapid, easy, not painful and may exclude other anorectal conditions. External macroscopic examination of the anal and perianal areas reveals the external opening of the fistulous track, even more in inactive cases with peripheral fistulous track and external opening closed; a meticulous probing, with a thin metal probe, of the skin deepening, reveal the external opening of the AF and the external fistulous track, reaching the diagnostic accuracy for the AF at maximum (148/148, 100%) at the first contact the patients in clinic outpatient.

MRI classification of AF with fistula protocol was performed in all

Fistula type	n=148 (%)
Simple	52 (35)
Simple linear intersphincteric	41 (27.7)
Simple low intersphincteric	11 (7.4)
Complex	96 (65)
Complex transsphincteric	75 (50.7)
Complex suprasphincteric	20 (13.5)
Complex supralelevator	1 (0.7)

Table 2: Classification of anal fistulas.

majority during surgery were placed in abdomino-perineal position. Those with anterior AF, were placed in prone position (Jack-Knife placement of the patient). All patients were at times in follow up for the eventual recurrence, with a mean time of follow-up between 6-12 months. A meticulous local anal hygiene was proposed in all patients postoperatively at least the first 6 weeks, until the healing of the external anal wound.

Statistical Analysis

Data were expressed as mean± standard deviation for continuous symmetrically distributed variables and as frequency (percentage %) for categorical data. Continuous variables were tested for normality using the Kolmogorov-Smirnov test. Comparisons of continuous variables were performed using Student t test. Categorical data were compared by the chi-square test or Fisher exact test, as required. Multivariate logistic regression analysis for recurrence rates could not be performed due to the small number of encountered events. Differences were considered as significant if the null hypothesis could be rejected with >95% confidence interval (P < 0.05).

Results

148 patients with chronic AF were enrolled in the study (112 males,36 females, age range 21-74yrs, mean age 44±13, male to female ratio 3.1/1). Duration of anal local symptoms was from 6months to 4yrs. with a mean time of 9±4 months. 134 AF were located posteriorly of the transvers anal line (134/148, 90.5%), while 14(14/148, 9.5%) were anterior AF. Demographics, clinical evaluation of AF and location of AF, are shown in table 1.

patients. Internal opening of the fistula track at the dentate line was found in 138 patients (138/148, 93%). Indeed in 4 patients, MRI was inconclusive for the exact position of the internal opening of the fistulous track. Those 4 patients were studied by TRUS detecting in all the internal opening.

Based in MRI images, 52 patients had SAF (52/148, 35%) and 96 (96/148, 65%) CAF. Patients with SAF were subdivided in two subgroups; a) simple intersphincteric linear fistulas in 41 patients (41/52, 79%) and b) simple low intersphincteric fistulas tracks in 11 patients (11/52, 21%) with containing an amount of the external sphincter <30%.Patients with CAF were subdivided in 3 subgroups; a) transsphincteric AF in 75 patients(75/96,78%), b) suprasphincteric AF in 20 patients(20/96,21%) and c) supralelevator AF in 1 patient(1/96, 1%).Classification of fistulas is shown in table 2.

EUA was performed in all patients, a step before the final decision making and option of the surgical treatment. Complete probing of the AF was feasible in all simple and most complex transsphincteric fistulas in 117 patients (117/148,79%). In complex suprasphincteric, supralevator, and 10 high transsphincteric fistulas an incomplete probing was performed with emphasis in probing two main anatomical areas; a) the first an incomplete probing of the external segment of AF from the external opening of the AF up to sphincteric system (external probing); this probing is helpful during surgery in peripheral fistulectomy performed and b) an incomplete probing of the internal opening of the AF (guided by

preoperative MRI or TRUS) and the initial segment of the CAF (endo-anal probing); this internal probing is helpful during surgery, showing the position of LIFT procedure performed

After EUA the following operations were performed: in linear intersphincteric SAF in 41 patients fistulotomy (41/148, 27.7%). In low intersphincteric SAF in 11 patients (11/148, 7.43%) only sphincter saving techniques; 6 were treated by LIFT (6/148, 4%) and 5 with laser therapy (5/148, 3.4%). In 96 patients with CAF (96/148, 65%) peripheral fistulectomy and LIFT was performed. Surgical operations performed are shown in table 3.

Type of fistula	Type of Surgery	n=148 (%)
Simple linear intersphincteric	Fistulotomy	41 (27.7)
Simple low intersphincteric	LIFT	6 (4)
Simple low intersphincteric	Laser therapy	5 (3.4)
Complex transsphincteric	LIFT+external fistulectomy	75 (50.3)
Complex suprasphincteric	LIFT+external fistulectomy	20 (13.5)
Complex supralevator	LIFT+external fistulectomy	1 (0.7)

Table 3: Surgical operations in anal fistula.

In postoperative follow-up in patients with SAF one recurrence was detected (1/52, 1.92%) with minimal local anal inflammatory changes, next to anal verge in MRI, without the need for reoperation; 10 months after surgery was achieved a complete regression of the inflammatory anal local signs. In 96 patients with complex fistulas 5 recurrences were detected (5/96, 5.2%). All these recurrences were SAF in MRI and were successfully treated by a new LIFT. In 96 CAF, successful postoperative healing was achieved in 91 CAF (91/96, 94.8%).

No patient postoperatively presented anal function disorders or

incontinence.

No patient studied, presented significant risk factors for the recurrence of AF.

In statistical analysis between simple and complex AF, there were not statistically significant differences regarding the age and sex. AF were 3 times more common in males than in females. Patients with CAF presented higher percentages for recurrences. Statistical analysis for various parameters is shown in table 4.

n, (%)	Simple anal fistula (n=52)	Complex anal fistula (n=96)	p-value
Age	43.8±5	44.1±4.9	0.85
Gender (Male/Female)	40 (76.9)/ 12 (23.1)	72 (75) / 24 (25)	0.84
Recurrence	1 (1.9)	5 (5.2)	0.66
Reoperations	0	5 (5.2)	0.16

Table 4: Differences in patients with simple versus complex anal fistulas.

Discussion:

To date there are no guidelines for the optimal surgical therapy of cryptoglandular AF. Indeed, some debates still exist regarding the timing and kind of surgery; In acute and sub-acute stages of cryptoglandular infection surgery may address the fistulous track, secondary tracks and abscesses cavities, with consequences regarding the increased number of recurrences and the anal continence function. Another option in such situations is the initial surgical control of anal sepsis, leaving the anal fistula therapy for later. Surgical therapy of AF, still remains empiric based on the accurate evaluation of simplicity or complexity of the AF and the ability of anal or general surgeon to perform the more suitable procedure for the AF.

In our patients, there were strict inclusion criteria for the surgical treatment of AF in order to assess the outcomes of the surgical procedures performed; those were the LIFT procedure with peripheral fistulectomy in CAF and fistulotomy, LIFT or laser therapy in SAF.

We give importance in the first contact of the patient with anal clinic outpatient; a complete surgical examination of the anorectal canal and past history (25), determine the cryptoglandular etiology, the complexity of AF, excluding acute or subacute anal septic conditions and other anorectal benign or malignant conditions (secondary AF were excluded from analysis); such secondary AF, and mainly the anal Crohn's disease, influence negatively surgical outcomes of LIFT, with propensity for persistence and recurrence while other surgical techniques as seton drainage and medical agents play an important role in the remission of the inflammatory process [26].

In our study 52 patients (52/148, 35%) had SAF. This percentage seems to be in high levels probably due to selection bias in our studied patients; numerous CAF with risk factors for recurrence were excluded from analysis in order to assess surgical outcomes of procedures performed.

All SAF, were easily probed during EUA before the surgical therapy. Despite such SAF, are diagnosed during the physical examination

disposing an easy further surgical management, we performed in all patients with SAF, MRI study with fistula protocol for the following reasons: a) 34% of patients with SAF seems to be more complex when MRI is performed, even though in CAF diagnosed, MRI increase the grade of complexity in 52% of patients studied [27], b) MRI and EUA were the most common and useful examinations for correct diagnosis of SAF with implications in further surgical management; The majority of SAF studied in 41 patients, (41/52, 79%) were simple intersphincteric treated successfully by fistulotomy without any postoperative continence problems, in this group were also included 2 patients with more simple entities: superficial/submucosal, where fistulotomy is an easy procedure. 11 patients (11/52, 21%) had simple low intersphincteric AF, containing an amount of external sphincter <30%; this estimation of external sphincter participation in fistula formation is an approximate and unsafe estimation in MRI and EUA and in such participation of external sphincter we avoided a fistulotomy, where despite the high healing rates >92%, minor continence problems (some times more severe) are reported in literature, up to 40% of patients with SAF treated by fistulotomy [8]. We consider this percentage of anal continence problems, despite minor, unacceptable for a benign anal condition with simple characteristics in middle aged patients; thus, fistulotomy in these 11 patients was replaced by sphincter saving techniques: LIFT in 6 patients and 5 with Laser therapy. Laser therapy in those patients was performed due to low length of fistulous track, easily probed with the laser probe [28], despite the cost. In our patients studied with SAF, we didn't use cutting-settons techniques; a more popular procedure in past with excellent healing rates at 85% [29], but with minor continence problems and some times more severe, ranging from 12 to 26% of patients with SAF [30]

Finally simple AF, are not so simple, at least in the field of correct diagnosis; due do advances in MRI studies we give attention in the estimation of the peripheral segment of simple low intersphincteric AF. This segment is located in a new recognized anatomical space, so called outer-sphincteric (between external sphincter and it's fascia). It's a space parallel to intersphincteric space, and a new pathway of the spread of cryptoglandular infection; infection may proceed upwards, remaining in outer-sphincteric and sublevator space and finally may result a complex fistula [31]. Finally the estimation of intersphincteric space by MRI, is crucial in simple and complex AF, as it is the initial space of cryptoglandular infection; despite the surgical treatment of complex fistulas, if this space is affected, the surgical therapy of complex fistulas must be helped by transanal opening of this space: a new operation, TROPIS (Transanal Opening of the Intersphincteric Space), seems to increase the outcomes of surgery for complex AF [32].

In our study 75 patients had transphincteric AF (75/148, 50.67%), 20 suprasphincteric AF (20/148, 13.51%) and 1 supralelevator AF (1/148, 0.67%). Another important risk factor for recurrence after surgery is considered an unidentified internal opening during surgery for AF [17]. It seems that 10-22% of patients operated for AF present an internal opening of AF not found [33].

In our patients studied, all AF had an identified internal opening; in 134 patients (134/148, 90.5%) the internal opening was identified by MRI (and before surgery by EUA) and in 14 patients with unidentified or inconclusive signs for the location of internal opening (14/148, 9.5%), the internal opening was found by TRUS. The unidentified internal opening in MRI, is not a disadvantage of MRI, but a wrong technique/protocol used; MRI of anorectal canal with fistula protocol is not an easy examination, according to the orientation of anorectal canal, oblique axial and oblique coronal plans are obtained. Anyway if internal opening is unidentified in MRI, the solution is the reassessment of MRI by a better technique or by TRUS. TRUS localized all the unidentified internal openings as they are located next to ultrasound probe. These two examinations are important and useful in surgical probing of the internal

opening and initial segment of the fistulous track, this probing is guided by MRI or TRUS, this diagnostic option for the internal opening neutralize the significance of the digital examination under EUA for the detection of the internal opening, although the sensitivity of the method may be > 60% if it is performed during EUA and it is bimanual. In our study and in 117 patients (117/148, 79%) with SAF and complex transphincteric AF, the internal opening was found by full external probing of AF without to create an iatrogenic false route. The goal in EUA is not to probe completely the AF, but to localize the internal opening determining the position of LIFT procedure, the skills and experience of anal surgeon should be at high levels, avoiding a full probing when intra-anal segment of AF is long and complex or in high locations of transphincteric segment of AF, as in supralelevator and suprasphincteric fistulas; an incomplete intra-anal probing of the internal opening is enough for further management.

In our study only 20 patients (20/148, 13.5%) had suprasphincteric AF, corresponding in grade 3 complexity according to SJUH classification and 1 (1/148, 0.67%) with supralelevator AF (grade 5 complexity)

All CAF in our study were surgically treated by the same strategy and technique; a) peripheral fistulectomy from the perianal skin up to anal sphincteric system leaving the transphincteric segment of AF intact, b) a modified LIFT procedure; the internal opening with surrounding mucosal tissue (proctoderma) at the dentate line, was removed and excised up to the level of internal sphincter. The opening of fistulous track was ligated at the level of internal sphincter and the overlying proctoderma was closed by some stitches.

In our patients studied only 1 patient with SAF (1/52, 1.92%) and 5 with CAF (5/96, 5.2%) presented a recurrence. All 5 recurrences in CAF patients were simple treated by a new LIFT. All recurrences were diagnosed 6 months after surgery in follow-up in clinical examination with a new MRI. From 5 recurrences in patients with CAF, 2 were developed after the 1st year from the operation. This simplicity of recurrences may be explained as following; a) There are indications that the same LIFT procedure, seems to undergrade the complexity of AF, b) the unknown factors related to cryptoglandular infection c) the lack of risk factors related to initial segment of fistulous track in our patients studied d) the possible existence of secondary fistulous tracks undetected in MRI or during surgery. The postoperative healing rates were 98% for SAF and 94.8% in CAF. This simplicity in recurrent cases shows the effectiveness of LIFT procedure.

In literature a confusion exists regarding the recurrences and healing rates after surgery and different procedures performed; due to heterogeneity in etiology, patients studied, kind of studies and risk factors for recurrence related to fistula characteristics, justify a recurrent rate from 2.5% up to 57.1% with an approximate risk at 20%. Numerous risk factors have been described in literature with significant or non-significant importance [34].

Regarding the surgical technique performed in our patients with CAF a modified LIFT procedure with external fistulectomy was performed, as total saving sphincter procedure. External fistulectomy has the disadvantage of an open peri-anal surgical trauma, necessitating a meticulous local hygiene and local gauze changes for some weeks until the wound healing. LIFT procedure is an ingenious sphincter saving technique firstly proposed in 1993 by Robin Phillips [35], since there a lot of modified procedures have been described; we used a similar technique described by Araújo et al. [36]. LIFT procedure, by the time gained popularity worldwide as it is a cheap, safe and easily performed technique with healing rates more than 80% alone performed, or any more in combination with other surgical techniques. Last year's numerous techniques, with sphincter saving profile have been reported [37], as laser therapy [11], VAAFT [10] and Photodynamic Therapy [12], other new

surgical techniques, as the mentioned TROPIS [32], PERFECT [38] and TFSIA [39] await evaluation for the future

Numerous other surgical techniques appear in literature, recently a new system of classification AF, based in a large number of patients with AF, includes all SAF, CAF, risk factors for recurrences with recommendations for the use of the suitable surgical technique should be used[40].

Conclusion

Chronic cryptoglandular AF, in selected patients without significant risk factors for recurrence present optimal surgical outcomes; healing rates in SAF at 98% and in CAF at 94.8% with a recurrence rate at 4.05%. Most common operation was LIFT performed in all CAF, low intersphincteric SAF and recurrent patients. Fistulotomy was a safe operation only in linear intersphincteric SAF. Laser therapy was a suitable technique in low intersphincteric SAF with low length of fistulous track. The most useful examination was MRI with fistula protocol, performed in all patients. Undetected internal openings of fistulous tracks in MRI, were detected by TRUS. EUA was performed in all patients with implications in further surgical management of AF. All patients were operated in ODS department. There were not postoperative complications regarding the anal continence.

Abbreviations:

AF=Anal Fistula,

CAF=Complex Anal Fistulas,

CD=Crohn's Disease,

EUA=examination under anesthesia of the anorectal canal,

LIFT=Ligation of the Internal Fistulous Track,

MRI= Magnetic Resonance Imaging,

ODS=One Day Surgery Clinic,

PERFACT=Proximal superficial cauterization, Emptying Regularly Fistula Tracts and Curettage of Tracts,

SJUH=St James's University Hospital system of classification for Anal Fistulas,

SAF=Simple Anal Fistulas,

TFSIA=Tunnel-Like Fistulectomy Plus Draining Seton Combined with Incision of Internal Opening of Anal Fistula,

TROPIS= Transanal Opening of the Intersphincteric Space,

TRUS=Trans Rectal Ultra Sounds,

VAAFT=Video Assisted Anal Fistula Treatment

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