Treatment Algorithm for Chronic Anal Fissure – A Review of Literature and it’s Apply in University Clinical Center Mother Teresa – Skopje

Marjan Dzeparoski*

Bionika Pharmaceuticals, Skopje, Republic of Macedonia

Abstract
Chronic anal fissure is one of the most frequent anorectal disorders. Symptoms vary but typically include bright red rectal bleeding, itching and discomfort or pain during and after defecation. Treatment has undergone a transformation in recent years from surgical to medical, all approaches sharing the goal of reducing the spasm.

According to the researched treatment guidelines and the experience at the “University Clinical Center Mother Teresa” (Clinic of Gastroenterohepatology and Clinic of Abdominal Surgery) in Skopje, Macedonia, we propose the following algorithm for treatment of chronic anal fissure in three steps: from topical nifedipine + lidocaine cream (first-line) to second course of nifedipine + lidocaine cream or digital anal dilatation or botulinum toxin type A injection (second-line) to lateral internal sphincterotomy (third-line).

The proposed treatment algorithm allows patients to start with the least invasive treatment. There is no doubt that patients are willing to try less invasive modalities with the hope of avoiding surgery, with its risk of permanent disability. It should be up to the patients to decide which treatment they prefer. Although chemical sphincterotomy is less successful from lateral internal sphincterotomy, the algorithm allows feasibility, efficacy and cost-effectiveness, as well as risk reduction for surgical morbidity.

Introduction
Chronic anal fissure (CAF) is one of the most frequent anorectal disorders [1]. It occurs mostly between the second and fourth decades of life with a lifetime incidence of 11%; frequency is approximately equal between genders [2, 3]. Typical fissures are almost universally single, and in the posterior midline. Up to 10% of typical fissures in women and 1% of those in men are found anteriorly [4]. Up to 11% of women develop the condition after childbirth [5]. The condition is also seen in children, but it is not certain that there is exact comparability to CAF in adults [6].

Symptoms vary but typically include bright red rectal bleeding, itching and discomfort or pain during and after defecation [7, 8]. The lesion may either be acute and self-limiting, or it may develop features of chronicity, including sentinel fibrous skin tag, hypertrophic anal papilla, exposure of the anal sphincter muscle fibers and elevated edges of the lesion. Most acute fissures heal spontaneously [8]. Conservative therapy consists of increased fluid and fiber ingestion, sitz baths, stool softeners and topical analgesics [7, 8]. If the fissure doesn’t heal for 6 weeks with conservative treatment, it may be considered chronic. Fissures with other underlying pathology such as Crohn’s disease, HIV, tuberculosis, syphilis or anal carcinoma are excluded (secondary fissures). The pathophysiological mechanism for nonhealing remain a matter of debate [1, 9], but reduced local blood supply has been suggested [1, 10]. Chronic fissure is usually associated with internal anal sphincter spasm, the relief of which is central to promote fissure healing. Treatment has undergone a transformation in recent years from surgical to medical, all approaches sharing the goal of reducing...
the spasm [11-13]. Reduction of anal pressure by
sphincterotomy or by anal dilatation improves
anodermal blood flow at the posterior midline,
resulting to fissure healing. However, the
postoperative period may be marked by surgical risks,
complications, and a late incidence of incontinence
that is sometimes permanent. Recently, new
pharmacologic therapies have been used to create a
reversible chemical reduction of sphincter pressure
until the fissure has healed [14]. Searches of the Cochrane
Database and PubMed MEDLINE were performed using keywords. From the
reviewed literature, additional articles of particular
importance published in earlier years were identified.

Treatment algorithm

According to the researched treatment
guidelines and the experience at the “University
Clinical Centre Mother Teresa” (Clinic of
Gastroenterohepatology and Clinic of Abdominal
Surgery) in Skopje, Macedonia, we propose the
following algorithm for treatment of CAF, which allows
patients to start with the least invasive treatment:

0.3% Nifedipine +
1.5% Lidocaine cream

0.3% Nifedipine +
1.5% Lidocaine cream

Lateral internal
sphincterotomy

First-line medical therapy

Topical nifedipine with lidocaine

In our treatment algorithm as first-line medical
therapy is proposed topical nifedipine with lidocaine
cream to be used twice daily for 21 days. Nifedipine is
calcium channel blocker (CCB) which reduces the
muscle tone by direct intracellular calcium depletion.
Topical nifedipine has been associated with healing of
chronic anal fissures in 65% to 95% of patients [15].
According to Cochrane reviews the healing rate is
48.9% with fewer side effects [6]; according to Perrotti
headache in up to 25% of patients [14]. 0.3%
nifedipine + 1.5% lidocaine cream is present since
June 2012 in Macedonia. There are no other
equivalent medicines on the market.

Second-line therapy

Repeat topical nifedipine with lidocaine

The optimal approach is further medical
therapy with an additional course of topical nifedipine
with lidocaine for the relapsing patients; these patients
were treated successfully [14, 16].

Digital anal dilatation after failed nifedipine
with lidocaine

Anal dilatation belongs to surgery procedures;

is a simple procedure first described by Racamier in
1829 and for many years was the primary treatment
for CAF [17]. At the “University Clinical Centre Mother
Teresa” is performed as out-patient procedure with
gentle manual dilatation with four fingers without
anaesthesia. According to Watts et al. the success
rates are 87 to 100%, with fissure recurrence from
16% of patients. Around 25% of patients experience
some form of incontinence [17-18]. According to
Hawley the average success rate ranges from 70-80%
[19]. According to Strugnell the healing rate of CAF is
89% [20]. Some authors support a policy of gentle
anal dilatation as the treatment of choice [21].
Incontinence is a concern and endo-anal
ultrasonography provides an insight as to the degree
of damage associated with this procedure; fragmentation
is often seen [18]. Experience of the
doctor and the skills and knowledge needed for digital
dilatations are very important, because both force and
magnitude of the stretch have to be tailored to the
patient.

Botulinum toxin after failed nifedipine
with lidocaine

Botulinum toxin (BTX) is effective in treating
fissures that have failed to heal with topical agents. It
blocks cholinergic transmission, injected into anal
sphincter reduces resting anal pressure, which effect
lasts 2-3 months [22]. According to third revision of
the American Society of Colon and Rectal Surgeons
(ASCRS) guidelines BTX injection allows healing in
60%-80% of fissures and higher rates than placebo
with recurrence in up to 42% of cases. The most
common side effects are temporary incontinence to
flatus in up to 18% or stool in 5% and perianal
thrombosis or hematoma [15]. According to Cochrane
reviews BTX and CCBs are equivalent to glyceryl
trinitrate in efficacy with fewer side effects; and they
are all marginally but significantly better than placebo
in healing anal fissure. Medical therapy for chronic
anal fissure, currently consisting of topical glyceryl
trinitrate, botulinum toxin injection or the topical
calcium channel blockers nifedipine or diltiazem in acute and chronic fissure and fissure in children may be applied with a chance of cure that is marginally better than placebo [6]. BTX can also be combined with nifedipine [23] or surgery [24]. Because of its cost and vial content of 100 U group of patients improves cost-effectiveness. At the Clinic of Gastroenterohepatology it is for the first time used since February 2014.

Third-line therapy

Lateral internal sphincterotomy after failed nifedipine with lidocaine

Lateral internal sphincterotomy (LIS) is still considered gold standard in the treatment of CAF, with reported cure rates of 94-100% [6]. It carries a risk of incontinence to stool and flatus which ranges from 3% to 16% [25-27]. ASCRS also provide a strong recommendation for LIS as the therapy of choice [15]. LIS is generally contraindicated for patients with impaired continence, chronic diarrhea due to chronic diseases or previous anal injuries.

Conclusion

In the search for optimal therapy for CAF, it should be fully understood the real physiological benefit provided by sphincterotomy – chemical or surgical. Since years there are debates worldwide about first-line therapy for CAF, which still continue. The first-line treatment of CAF with topical agents has led to management algorithms that can be employed effectively [28].

There is no doubt that patients are willing to try less invasive modalities with the hope of avoiding surgery, with its risk of permanent disability. It should be up to the patients to decide which treatment they prefer.

Although chemical sphincterotomy is less successful from LIS, the algorithm allows feasibility, efficacy and cost-effectiveness, as well as risk reduction for surgical morbidity.

References