LATERAL INTERNAL SPHINCTEROTOMY FOR TREATMENT OF CHRONIC ANAL FISSURE IN PEDIATRICS

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ABSTRACT

Background: Lateral internal sphincterotomy is a well established surgical technique for treatment of chronic anal fissure in the adult. The aim of this study was toevaluate the outcome of lateral internal sphincterotomy in Pediatrics.

Subject and Methods: This is a prospective study performed over a period of 4 years from October 2008 to October 2012 on 37 patients with the chronic anal fissure of a duration exceeding three months and history of failure to conservative treatment. All patients underwent left lateral internal sphincterotomy through an open technique. The outcome was evaluated by assessing the effectiveness of this procedure in relieving the symptoms, fissure healing, parents' satisfaction and complication rate.

Results: There were 26 boys and 11 girls, mean age was 11 months with a range of (6 months – 12 years), and symptoms were relieved within two weeks in 28 cases and within one month in 5 cases. 4 patients require postoperative oral laxative for 1-3 months to overcome the withholding behavior. Fissures healed in 34 by eight weeks postoperatively. Parents were satisfied with the outcome in 32 patients. Four patients developed postoperative bleeding, and only one of them was serious and required cauterization, soiling occurred in 3 cases. No permanent incontinence was reported.

Conclusions: Lateral internal sphincterotomy is an effective and safe surgical technique for treatment of chronic anal fissure not responding to medical therapy in pediatric. Complications are uncommon, and the risk of incontinence is very minimal if the proper surgical technique is performed.

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Keywords: Lateral sphincterotomy, a chronic anal fissure in children.

The anal fissure is a linear tear in the squamous epithelium of the distal anal canal extending from dentate line to the anal verge. Usually it involves the posterior midline but in 10% or more may occur in the anterior midline. It mostly occurs in children aged 6-24 months, coincident with the weaning. Usually, the patient present with painful defecation, constipation, and streak of bright blood on the hard stool, on the diaper or toilet paper.It is the commonest cause of lower gastrointestinal bleeding in children[1]. It results froma mechanical tear that arises from the passage of hard stool. The pain will encourage stool retention by the child, and this will further increase constipation[2]. Internal anal sphincter hypertonicity and

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ischemia of anoderm have been implicated in adult series[3]. Similar pathophysiology could be applied in children[1].

An anal fissure regarded as chronic when it present with an indurated edge, a sentinel pile, visible internal anal sphincter fibers and hypertrophied anal papillae. Anal fissure with history of more than eight weeks also regards as chronic[4].

Anal fissure in children is usually responsive to increasingfibers indiet, use of stoolsoftener and sitz bath but if this fails, surgical treatment isthe choice. Surgical options in children include anal dilatation, lateral sphincterotomy or fissurectomy[2]. Lateral sphincterotomy in adult regarded as the gold standard for treatment of chronic anal fissure[5]. This can be achievedby either opentechnique or closed technique, both having similar efficacies[6].

PATIENTS AND METHODS

This is a prospective study achieved at the department of pediatric surgery in Heevi Hospital during four years from October 2008 to October 2012. Thirty seven patients with chronic anal fissure for more than three months and failure of medical treatment were included in the study. Chronic anal fissures were diagnosed depending on history and clinical examination. Because of severe pain, rectal examination was not done. An informed consent was obtained from parents. Left lateral internal sphincterotomy was done for all of the patients through an open technique in lithotomy position under general anesthesia. This procedure was performed as a day case surgery. Postoperatively, the patients had stool softeners and analgesics for two week. Weekly followed-up was performed for one month followed by monthly follow up for 6 months. Evaluation of outcome was done through the assessment of the efficacy of this procedure in symptoms relief, healing of the fissure, satisfaction of parents and rate of complications. Evaluation of continence was made by assessment of the quantity, frequency and quality of defecation. Incontinence was said to be present if there was continuous leak-out of stool, continuous soiling or defecation without urge or warning.

RESULTS

Thirty seven patients with chronic anal fissure were includedin this study. Gender distribution was 26 boys and 11 girls.The mean age were 11 months with a range of (6months – 12 years). All of the patients had constipation and proctalgia while just28 patients hadbleeding per rectum. The mean duration of symptoms was four months (3-9 months). Open left Lateral internal sphincterotomy was performed forall patients.Symptomsrelief within 2 weeks was achieved in 28 cases (75.7%) and within one month in 5 cases (13.5%). Four patients (10.8%) needed the use of postoperative oral laxative for 1-3 months to overcome the withholding behavior.Healing rate of chronic anal fissure at 8 weekswas 92%. Parents were satisfied with the outcome in 32cases (86.5%).

Four patients developed postoperative bleeding and only one of them was significant and required cauterization. No recurrence reported during follow up. Soiling occurred in 3 cases (8%). No permanent incontinence was reported.

DISCUSSION

An anal fissure is a common condition causing pain on defecation in adults and children. Most anal fissures respond well to conservative or topical management. In refractory cases surgery may be required. Operative options include: Lateral internal sphincterotomy (Procedure of choice), Posterior internal sphincterotomy, Bilateral internal sphincterotomy, Anterior levatorplasty, Fissurectomy and manual anal stretch. Surgery aims to lower resting anal tone, therefore improving blood supply and thus enhancing healing[1,3].

Lateral sphincterotomy is regard as the first line or the gold standard treatment for chronic anal fissure in adult with higher than 90% cure rate [4,5] but limited data of this procedure has been obtained on pediatric patients. In the present study 90% of patients with chronic anal fissure healed by 4 weeks after performing lateral sphincterotomy and in 93% of patients by the 8 weeks, this is in accordance to a similar study done on pediatric patients[7] and also equal to adult studies[6]. Cohen and Dehn performed lateral sphincterotomy on 23 children with chronic anal fissure and all the fissures healed with no recurrence is reported[7].

When it came to complications of lateral sphincterotomy, they were rare and simple, one of 4 patients who develop bleeding required cauterization. Three patients develop soiling but all were transient and improved within 6 months, no permanent incontinence was reported. Cohen and Dehn reported no fecal incontinence after lateral sphincterotomy in children and only one mentally retarded child had soiling before and after operation[7]. Risk of incontinence following lateral sphincterotomy in adult series varies from 0-15%. The rate of incontinence following lateral sphincterotomy in systemic review of 324 studies on adult was 14%[8] but in the meta-analysis by Nelson, the reported incidence of incontinence was much less and rare[6], while no incontinence reported by others[9]. Incontinence that follows lateral sphincterotomy has been found to be transient[4,5], this may be because the increase of the tone of the internal sphincter that indicates recovery of the sphincter post operatively[9]. The high percentage of incontinence following lateral sphincterotomy in some adult series may be attributed to older aged patients, multiparous women and additional or previous anal surgery[10].

Many studies were made on anal dilatation in adults but in children itwas not found so beneficial with high recurrencerate[11]. It may lead to transient symptomatic improvement but does not appear to heal the fissure and may cause sphincter disruption[12]. There is a higher risk of incontinence and recurrence in patients who underwent dilatation by comparison to those who underwent lateral sphincterotomy[13] and Sphincter damage have been reported in more than half of patients who underwent dilatation[14]. In a meta-analysis of operative techniques for anal fissure by Nelson RL comparing dilatation with sphincterotomy, the author concluded that lateral internal sphincterotomy is superior to anal dilatation and significant high complication rate with dilatations compared with lateral sphincterotomy[12]. The advantage of lateral sphincterotomy over anal dilatation, if fecal incontinence occurred internal sphincter can be repaired

following lateral sphincterotomy while repair is impossible in disruption of the sphincter after dilatation[7].

Lambe et al performed fissurectomy to treat children with anal fissure and 81% were asymptomatic at 6 weeks postoperatively but some patient required reoperation in addition they required additional postoperative stool softener with at least 6 weeks follow up[7] but lateral sphincterotomy is preferred more than fissurectomy because of the faster and higher rate of healing with lower occurrence of postoperative incontinence[15].

Chemical sphincterotomy is another option in the treatment of chronic anal fissure and aimed to relax the spasm of internal anal sphincter without causing permanent damage. Tander *et al.* reported high healing rate (84%) of anal fissure in paediatrics using glyceryl trinitrate (GTN) ointment but his study ended after 8 weeks of treatment with no prolonged follow up for recurrence[16]. Similarly Simpson et al study thatonly included patients older than three years found response to chemical in two third of patients[3]. Recurrence of anal fissure was reported in one third of patients according to a study by Demirbags *et al*[17].

Studies have been made widely on Botulinum toxin in adults but there is only limited experience on pediatrics and it has been associated with high recurrence rate. Husburg studied botulinum toxin in children with anal fissure but his study was conducted on a small number of children and there were recurrence of symptoms in half of cases[18].

Klin B *et al*· used lidocain for treating patients with anal fissure, they concluded that it is the most efficient mode of treatment but his study conducted on patients with acute and chronic anal fissure and there were 7% recurrence[1].

In a meta-analysis of medical therapy for anal fissure by Nelson, he found that GTN, Diltiazem and Botox were not significantly better than placebo in curing anal fissure and the headache which caused by GTN was often severe enough to stop the therapy and it was significantly less effective than sphincterotomy in curing of anal fissure[19].

We concluded that the preferred procedure in children with chronic anal fissures lateral sphincterotomy but it should be done only for the patients who fail to heal with medical treatment. Sphincter damage is still a risk of concern. There is a need for prolonged follow up to exclude incontinence and recurrence since it is difficult to assess the continence in infants. Further studies are required to compare different medical and surgical modes of treatment.

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پوختە

گەورینێن تەخێن شانەیی بێن هەمەجور لدەف کوردێن عێراقێ بێن کو پەنجەشێرا خوینێ ژجورێ مایلویدا دژوار هەی. ڤەکولینەکا پاشڤەیێ لسەر 105 نەخوشان

پێشەکی: نشتەگەریا برینا ماسولکا کونترولکرنا خوپیسکرنێ رێکەکا بەربەلاڤە بو چارەسەریا قەبزبونێ ژ ئەگەرێ شەقبونا جهێ خوپیسکرنێ ل دەڤ مەزنان. ئارمانج ژ ئەڤێ ڤەکولینێ ئەوبوو دیارکرنا ئەنجامێن نشتەگەریا برینا ماسولکا کونترولکرنا خوپیسکرنێ ل دەڤ زاروکا.

رێکێن ڤەکولینێ: ئەڤ ڤەکولینە ل بنگەهێ نشتەگەری یێ نەخۆشیێن زاروکا ل نەخوشخانا هیڤی یا فێرکرنێ ل باژێرێ دهوکێ /هەرێما کوردستانێ/عیراق هاتە ئەنجامدان د ماوێ چار سالاندا هەر ژ هەیڤا چریا ئێکێ 2008 هەتا هەیڤا چریا ئێکێ 2012. سیە و حەفت نەخوشییێن ب شەقبوبا جهێ خوپیسکرنێ یا دوم درێژ کو مفا نە وەرگرتبو ب چارەسەرکرنێ برێکا دەرمانا هاتنە نشەگەریکرن ب رێکا نشتەگەریا برینا ماسولکا کونترولکرنا خوپیسکرنێ.د ڤەکولینێدا گازندێن نەخوشا بێن کلینیکی, چارەسەریا شەقبونێ, رازیبونا دەیك و بابا ژ رێکا چارەسەریێ و دیفچونا ئەنجاما هاتنە شروفەکرن.

ئەنجام: د ڤێ ڤەکولینێدا 26 کور و 11 کچ د بەژداربون. ژیێ وان ژ 6 هەیڤا تا 12 سالان بو, قەبزبون و ئێشان هاتنە چارەسەرکرن د ماوێ 2 حەفتیاندا ل دەف 28 نەساخا و د هەیڤەکێدا ل دەڤ 5 نەساخاندا. 4 نەخوشا پێتڤی ب چارەسەریێ کر ب رێکا دەرمانا بو نەهێلانا قەبزبونێ. ل دەف 34 نەخوشا شەقبونا ماسولکێ ب تەمامی ساخبوو د ماوێ 8 حەفتیاندا پشتی نشتەگەریێ. سەمیانێن 32 نەخوشا د رازیبون ژ ئەنجامێن نشتەگەریێ . 4 نەخوشا نەزیڤ ل نك وانا پەیدابو , بتنێ ئێك ژ وان نەزیف یا سەخت بو و پێتڤیَ ب کەویکرنێبو. ب خوڤەپیسکرن ل دەڤ 3 نەخوشا پەیدابوو. ب گشتی هەمی نەخوش کونترولکرن ل سەر خوڤەپیسکرناخو هەبون ل پشتی نشتەگەریێ.

دەرئەنجام: دڤێ ڤەکولینێدا دیاربوو کو نشتەگەریا برینا ماسولکا کونترولکرنا خوپیسکرنێ ل دەڤ زاروکا رێیەکا کاریگەرە و نەیا مەترسیدارە بو چارەسەرکرنا شەقبوبا جهێ خوپیسکرنێ یا دوم درێژ کو مفا نە وەرگرتبو ب چارەسەرکرنێ برێکا دەرمانا.

الخلاصة

قص العضلة العاصرة الداخلية لعلاج الفطر الشرجي المزمن عند الأطفال

الخلفية والأهداف قص العضلة العاصرة الداخلية الجانبي هي تقنية جراحية راسخة لعلاج الفطر الشرجي المزمن عند البالغين. اجرينا هذه الدراسة لتقيم نتائج هذه التقنية عند الأطفال.

طرق البحث: هذه الدراسة الأستطلاعية اجريت على مدى 4 سنوات من أكتوبر 2008 الى أكتوبر 2012 و شملت الدراسة 37 مريضا يعانون من الفطر الشرجي المزمن لمدة تتجاوز الثلاثة اشهر مع عدم الأستجابة للعلاج التحفظي, خضع جميع المرضى لعملية القص الجانبي للعضلة العاصرة الداخلية بالتقنية المفتوحة ثم تم تقيم النتيجة من خلال تقييم فعالية هذه التقنية في تخفيف الأعراض, شفاء الفطر, رضا الوالدين و نسبة حدوث المضاعفات.

النتائج: شملت الدراسة 26 صبيا و 11 فتاة مع متوسط عمر 11 شهر(6 شهر–12 سنة), تم ملاحظة تخفيف الأعراض في غضون اسبوعين في 28 حالة وخلال شهر واحد في 5 حالات, في 4 حالات تم اعطاء الأدوية الملينة لمدة 1–3 شهر للتغلب على الأمساك. شفي الفطر في 34 حالة خلال 8 اسابيع من تاريخ العملية. كانت النتيجة مرضية جدا للوالدين في 32 حالة, في 4 حالات حدث نزف دموي ولكن في حالة واحدة تطلب الوضع اجراء كوي للنزف, حدث التهاب في 3حالات استجابت للمضادات الحيوية, لم تحدث اية حالة سلس غوطي.

الاستنتاجات : القص الجانبي للعضلة الداخلية العاصرة هي تقنية جراحية فعالة و أمنة لعلاج الفطر الشرجي المزمن الذي لايستجيب للعلاج التحفظي عند الأطفال. المضاعفات هي غير شائعة و خطر سلس الغوط هي في الحد الأدنى اذا تم تنفيذ هذه التقنية بصورة صحيحة.