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Original Research Article

Evaluating the role of topical steroids as a primary intervention for treatment of phimosis in pediatric age group

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ABSTRACT

Background: Phimosis is the inability to completely retract the prepuce, a common cause of anxiety to parents of young boys. It is usually physiological and gradually improves with age. Phimosis is considered a problem when there is fibrotic foreskin and its adherence to the glans making it impossible to expose the glans.
Methods: Study was conducted on 82 patients that presented to the surgical Outpatient Department (OPD) at Smt. SCL Hospital, NHL Medical College, Ahmedabad for a period of 2 years between September 2011 to September 2013. Case selection was done by detailed history, clinical examination and followed up regularly at 1 week, 2 week and 1 month in necessary individuals. The treatment consisted of applying a topical steroid (betamethasone 0.05% cream) three times a day.
Results: 85% of patients had physiologic phimosis and along with Frenulum Breve the count rose to 91%. Only 9% presented with pathological or acquired phimosis. 51 out of 53 patients who completed the course (96%) achieved success with conservative line of treatment. Only 2 failures were seen (4%). 72.5% of patients responded successfully within 2 weeks of treatment. 27.5% of patients took 1 month of therapy to be successful.
Conclusions: The study has shown that a majority (96%) of boys with phimosis can be successfully treated conservatively. Hence, topical steroids might be used as a first-line therapy for phimosis, as a feasible pre-surgery alternative. Surgical interventions should be reserved for recalcitrant phimosis that do not respond to medical administration.

Keywords: Penis, Phimosis, Steroids, Circumcision

INTRODUCTION

Phimosis i.e. the inability to completely retract the prepuce, is a common cause of anxiety to the parents of young boys. Most of the time, it is physiological and gradually improves with age. Phimosis is considered pathological when there is fibrotic foreskin and its adherence to the glans making it impossible to expose the glans. Frenulum breve i.e., shortened frenulum is another cause.

Phimosis hinders proper hygiene of the penis, which favors the incidence of foreskin infections, frequent infections of the urinary tract, sexually transmitted diseases and penile carcinoma in adults.

Circumcision, the traditional treatment for phimosis, is only attractive if there is an associated religious indication. The major problems following the circumcision are hemorrhage, urethral meatus stenosis and pre-skin ring, leading to paraphimosis, and even glans amputation.[4] The need for general anesthesia for infants and the associated

in-patient care and expenses involved deter the parents from opting it easily.[3,5]

Recently, clinical treatment of phimosis using topical corticosteroids has been proposed as an alternative to surgery with good results regardless of the patient's age.[6-8] Daily retraction for cleaning and application of the ointment cause repeated small bruising and tear of the soft tissue in the prepuce. Usually the healing would involve inflammation and fibrosis resulting in further tightening of the prepuce. However, the role of steroids in limiting or preventing fibrosis and inflammation allows for healing without fibrosis, thereby making the skin elastic. Topical steroid treatments have a promising success rate from 67-95% as per many earlier studies.[2,8,9]

METHODS

Study was conducted on 82 patients that presented to the surgical Outpatient department (OPD) at Smt. SCL Hospital, NHL Medical College, Ahmedabad for a period of 2 years between September 2011 to September 2013. Case selection was done by detailed history, clinical examination and followed up regularly at 1 week, 2 week and 1 month in necessary individuals.

Inclusion criteria

All pediatric (2-12 years) patients coming to the surgical OPD with complaints of nonretractile prepuceal skin were included.

Exclusion criteria

Patient who opted out of the study and those with associated external genitalia deformities were excluded.

Sampling method

Sequential selection of patients was carried out and counseled for the treatment options.

Treatment material

Betamethasone (0.05%) cream, sinus probe, surgery if necessary.

Diagnostic tool

The diagnostic tool was clinical.

Type of study

The study was a prospective, descriptive, non-randomized study.

Statistical method and tool

The statistical method used was proportion and the statistical tool used was Microsoft (MS) excel. Data was compiled and entered in MS excel. Proportions and percentages were calculated.

82 patients of phimosis selected into the study group. Classified according to Kikiros, Beasley and Woodward classification counseling of parents done and treatment modalities explained. 14 patients opted for surgical management and refused conservative line.

The treatment consisted of applying a topical steroid three times a day, particularly at night before bedtime. The parent was shown how to apply the cream with gentle massage to the rose tip of the foreskin. There was no effort to insert them internally. The cream used was 0.05%. Follow up taken after 1 week and 2 weeks. Those with no improvement were given further therapy for another 2 weeks and follow up taken at the end of 1 month of therapy.

Reassessment and classification made according to Kikiros, Beasley and Woodward classification. Once the treatment was completed, the boys showing total absence of preputial ring and adhesions (Kikiros grade 1) or only preputial adhesions in the absence of ring (Kikiros grade 2) were considered cured, whereas patients with a persistent preputial ring, comprising Kikiros degree 3, 4, or 5 cases, were considered non-responders and advised circumcision. Successful therapy accounts for the patients cured with steroid therapy at the end of one month.

RESULTS

This study consists of 82 cases of phimosis that presented to the OPD of surgery in our institute during the period of two years. These patients were classified, investigated and managed either medically or surgically. The results and findings of which are recorded as given below.

Table 1: Age distribution.

Age group (in years)	Number	Percentage
<3	18	21.9
3-6	13	15.9
7-10	30	36.6
>10	21	25.6
Total	82	100

The youngest patient treated was 2 years old, the eldest was 12 years. The majority were in the 7 to 10 years of age (30/82), closely followed by 10-12 years age group (21/82). Those less than 3 years of age were 18 out of 82 patients.

Causes of phimosis

The most common cause for phimosis observed was physiological 70 out of 82 (85.36 %). Trauma, recurrent phimosis due to infection, urinary tract infection (UTI) and

insect bite were only 7 out of 82 (8.54%). Frenulum breve 5 out of 82 cases was also included as a cause of phimosis.

Conservative management

A total of 68 patients were started on topical steroid therapy out of the 82 patients, of which 53 patients completed conservative line of management for a period of one month. In the present study 51 out of 53 patients (96%) gave positive results with complete retractability and thus labeled successful, 2 patients even after 1 month of treatment failed to respond (2.4%) and both these patients were infants with pinhole meatus.

Table 2: Conservative management.

Treatment		No. of cases	%
Completed	Successful	51	75
	Failure	2	2.94
Defaulter		15	22.06
Total		68	100%

Surgical management

A total of 31 of 82 were managed surgically. Out of this, 14 were elective mostly due to religious belief and social practice (45%), 15 were defaulters and thus managed surgically (48%). 2 out of the 31 were due to failure of conservative lines of treatment at the end of 1 month of follow up.

Conservative versus surgical management

Fifty-one (51) out of 82 (62.20%) were successfully treated by conservative method. The remaining 31 were treated by circumcision including elective, failure of conservative treatment and defaulters.

Table 3: Conservative treatment.

Treatment timeline	Present study	
Duration	**No. of cases**	**Percentage**
1 week	9	17.65
2 week	28	54.90
1 month	14	27.45
Total	51	100

In the present study, 9 out of the 51 patients (17.65%) responded within the first week of treatment. 14 (approximately 27%) patients took about a month of therapy to respond. About 72.5% that is 37 (9+28) of 51 patients responded within 2 weeks of treatment.

DISCUSSION

In recent years, topical steroid has been propagated as an effective alternative to circumcision for treatment of phimosis; with success rates ranging from 67% to 95%.[12,13]

We did not encounter any adverse effects in our patients in our sample. 85% of patients had physiologic phimosis and along with Frenulum breve the count rose to 91%. Physiologic phimosis involves the foreskin just being non-retractable. Only 9% presented with pathological or acquired phimosis. Diagnosis of phimosis were mostly clinical and no laboratory or imaging studies are required. Management plan depended on age of child, type of non retraction, severity of phimosis, cause, and associated morbid conditions. 83% of patients were willing to undergo conservative lines of management as the first line of treatment, though 22% defaulted with poor adherence to therapy.

51 out of 53 patients who completed the course (96%) achieved success with conservative line of treatment. Only 2 failures were seen (4%). 72.5% of patients who underwent conservative lines of treatment responded successfully within 2 weeks of treatment. 27.5% of patients took 1 month of therapy to be successful.

Topical steroids therefore may be used as an effective first-line therapy for pathological phimosis, and a feasible pre-surgery alternative. Surgical interventions can be reserved for recalcitrant phimosis that do not respond to medical administration.

A study by Dr. Webster done in 2002, on 69 patients of which 62 were stated on conservative steroid therapy (Table 2).

In comparison with Dr. Webster's study, 50 of 54 (92.60%) gave positive results with 4 failures to therapy. Another 15 patients out of 68 were started with conservative management but defaulted either with wrong schedule or wrong method or later opted for circumcision before follow-up period of 1 month and were thus termed as defaulters (22%). In the same study, 19 out of 69 were managed surgically, 7 elective (36.84%), 8 defaulters and 4 failures totaling 63%. 50 out of 69 (72.46%) were managed successfully by conservative method whereas 19 had to be surgically managed.

In a study done in 2001 (Table 3), 48 out of 70 (nearly 69%) patients responded positively within 2 weeks of treatment. Around 31 % responded after a month.

CONCLUSION

The study has shown that 96% of boys with phimosis can be successfully treated conservatively. This offers another significant modality of care in the current social environment where neonatal circumcision is practiced less regularly than previously. Many parents are understandably more hesitant to consent to it in later years, having made the decision not to have their newborn male baby circumcised. They understand the pain that the child faces from circumcision, but the necessity of the operation makes the parents doubt their original decision. The effectiveness of this approach is therefore very high,

provided there is strong adherence to the therapeutic modality. In the case of elective circumcision, which is more regulated by religious beliefs and social traditions, this conservative modality however, has no locus standi. This study proves the usefulness of topical steroids as treatment in established diagnosis of phimosis.

However, a limitation we noticed was, that a majority of the patients came within the physiological subgroup and only a few in the pathological subgroup. A randomized control group with a placebo cream would have been more convincing in establishing the efficacy of steroids.

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