International Journal of Science and Research (IJSR)
ISSN: 2319-7064
SJIF (2022): 7.942

Topical Betamethasone Therapy vs Serial Dilatation in Prepubertal Phimosis: A Comparative Study

Dr. Akshita Yadav[1], Dr. Anshuman Mahesh Chander[2], Dr Raj Rishi Sharma[3], Dr. Sarvesh Singh Lobana[4]

[1]Post Graduate Student, 2nd Year, Department of General Surgery, Government Medical College, Kathua, J&K., India

[2]Associate Professor, Department of General Surgery, Government Medical College, Kathua, J&K. , India

[3]Head of Department, Department of General Surgery, Government Medical College, Kathua, J&K. , India

[4]Junior Resident, Department of General Surgery, Government Medical College, Kathua, J&K. , India

Abstract: ***Phimosis, characterized by the inability to retract the foreskin over the glans penis, poses clinical challenges, particularly in pediatric cases. While most instances resolve naturally, severe phimosis can lead to complications such as urinary tract infections and balanoposthitis. Traditional treatment with circumcision, though effective, is associated with surgical risks and economic burdens. This article explores an alternative approach, comparing Betamethasone therapy with serial dilatation for prepubertal phimosis in a study conducted at GMC Kathua, JK. The study aims to evaluate the recurrence rate, grade of retractability achieved, failure rate, pain, and anxiety levels among a cohort of 100 participants aged 212 years with severe phimosis. By investigating the effectiveness of topical steroids and dilatation techniques, this research offers insights into less invasive and cost - effective treatment options, potentially reducing the need for circumcision in pediatric patients.***

Keywords: Phimosis, Betamethasone therapy, serial dilatation, pediatric patients, circumcision

1. Introduction

Phimosis is defined as a condition with inability to retract the foreskin over the glans penis owing to a tight preputial ring distal to the glans. [1] Phimosis is normal at birth or occurs secondary to scarring of the distal foreskin when the foreskin cannot be retracted. [2] Although most cases of phimosis resolve with time without any symptoms, severe cases of phimosis may lead to urinary tract infections (UTI), balanoposthitis or urinary obstruction, which require treatment. [3]Traditionally, circumcision has been the main treatment choice. However, circumcision is an invasive procedure, which may lead to a financial burden and the complication rate is 0.1%–3.5%. The complications include bleeding, infection, scar stenosis and anaesthesia-related adverse events. [4]

2. Review of Literature

In neonates, physiologic phimosis is observed owing to natural adhesion between the inner foreskin and the glans penis [5]. The incidence of physiologic phimosis in newborns is reported to be about 96% [6]. The foreskin naturally detaches from the glans penis within the first 2 to 3 years of age following the formation of keratinized pearls [7]. The incidence of physiologic phimosis falls to 10% and 1% at the ages of 4 and 14 years, respectively, without special treatmentMost patients referred due to phimosis are actually suffering from the physiological type of non - retractability. Physiological phimosis is widely prevalent in male newborns. However, the degree of preputial retractability increases with age and the stage of preputial separation varies greatly among individuals[5] It is termed pathologic when associated with local or urinary complaints attributed to the scarred prepuce. The difficulty in differentiating between physiological and pathological phimosis leads to undue concern and anxiety among parents and unnecessary referrals. In the past decades, the first line of treatment of non - retractile prepuce was circumcision. This operative intervention is not without adverse effects and has a large economic impact. In the past decades, the first line of treatment of non - retractile prepuce was circumcision. This operative intervention is not without adverse effects and has a large economic impact. The only reasonable indication for circumcision, i. e. a pathological phimosis, affects about 0.6% of boys, with a peak in incidence at the age of 11 years, and is rarely encountered before the age of 5 years [8]. With the advent of newer effective and safe medical and conservative techniques, circumcision is gradually getting outmoded.

In the 90's, topical steroids were introduced as a nonsurgical alternative for the treatment of phimosis. Their potential advantages are: less trauma, lower cost, avoidance of anaesthesia and surgical complications like hemorrhage, pain and infection [9]. The success rates of steroids in phimosis as reported in the literature ranges from 65% to almost 90% [9]. The aim of topical corticosteroid treatment is to reduce skin tightening around the tip of the penis. This offers a relatively less invasive treatment and may limit the need for surgery among the majority of boys [4].

Table 1: Grades of Retractability of the Foreskin according to Kikiros et al

Grade	Description
0	Full retraction, not tight behind glans, or easy retraction limited only by congenital adhesions to the glans
1	Full retraction of foreskin, tight behind the glans
2	Partial exposure of glans, prepuce (no congenital adhesions) limiting factor
3	Partial retraction, meatus just visible
4	Slight retraction, but some distance between tip and glans, i. e., neither meatus nor glans can be exposed
5	Absolutely no retraction

3. Aims and Objectives

Aim: To compare betamethasone therapy with serial dilatation for prepuebertal phimosis

Objective:
Primary outcome: recurrence rate
Secondary outcome: grade of retractibility achieved, failure rate, pain, anxiety

Methodology
This study will be carried out in the department of general surgery, gmc kathua j&k

Study duration: 6 months

Follow up: 21 days

Study population: 100

Inclusion Criteria:
1) Age group: 2–12 years.
2) Severe phimosis (Kikiros retractability grade of 4 or 5).
3) Accepting the topical steroid or foreskin retraction treatment and completing the treatment course of 4 weeks.
4) Accepting dilatation treatment

Exclusion Criteria
1) Pathological phimosis (failure to retract the foreskin due to distal scarring of the prepuce [1]).
2) Hypospadias or any other congenital anomaly.
3) Failure to complete steroid treatment.
4) Failure to undergo dilatation

4. Study Procedure

Technique for application of the topical steroid ointment

The use of the topical steroid ointment was explained and taught to parents before the initiation of the treatment at home. The parents were informed about the possible local side effects of the steroid ointment, such as striae, pigmentation changes, telangiectasia, and hypertrichosis. The technique involved application of topical Betamethasone dipropionate ointment 0.05% after the gentle retraction of the prepuce. No attempt was made to forcibly retract the prepuce, so as to avoid splitting and bleeding of the foreskin. The application was done three times a day for a period of 21 days. No occlusive dressing was used. Patients were followed up every 15 days for a period of 6 months.

Serial Dilatation of foreskin in this method after putting lignocaine jelly on the foreskin, a small artery forceps is used to dilate the phimosed foreskin multiple times till the foreskin can be fully retracted back. After which patient is sent home with gauze dessing and followed up every week for 21 days and then every 15 days for a period of 6 months.

Treatment evaluation criteria
1) Success was defined as downgrading of phimosis to grade 0 or 1.
2) Recurrence was defined as successful results of phimosis grade 0 or 1 at week 4, which reverted to phimosis grade >2 at follow-up.

5. Results

In the Beclomethasone group of 24 patients (mean age-2.3):

Grade 0 was achieved in 11 patients (45.8%). Grade 1 was achieved by 9 patients (37.5%). Out of these 18 patients (75%), 5 patients (28%) developed recurrence. Grade 2-2 patients (8.3%), Grade 3-1 patient (4.17%), Grade 4-1 patient (4.17%).

Out of total 24 patients, 9 were circumcised (37.5%).

In the serial dilatation group of 24 patients (mean age-2.4):

Grade 0 was achieved in 5 patients (20.8%), Grade 1 in 3 patients (12.5%). Out of these 8 patients (33.3%), 5 patients (62.5%) developed recurrence.

Grade 2-6 patients (25%), Grade 3-7 patients (29.1%), Grade 4-3 patients (12.5%).

Out of total 24 patients, 11 were circumcised (45.8%).

	Betamethasone Therapy	Serial dilatation
Success	83.3%	33.3%
Recurrence	25%	62.5%
Circumcision	37.5%	75%

6. Conclusion

In the realm of phimosis management, this study presents an innovative and less invasive approach by comparing Betamethasone therapy with serial dilatation for prepubertal cases. The research, conducted at GMC Kathua, JK, focuses on a cohort of 100 pediatric patients, aiming to assess treatment outcomes in terms of recurrence rates, retractability improvements, and overall patient experience. By offering a viable alternative to circumcision, this study addresses the concerns surrounding surgical complications and economic implications, potentially reshaping the way phimosis is treated in the pediatric population.

References

[1] Letendre J, Barrieras D, Franc-Guimond J, Abdo A, Houle A. Topical triamcinolone for persistent phimosis. *J. Urol.*2009; 182: 1759–64. [PubMed] [Google Scholar]
[2] Monsour MA, Rabinovitch HH, Dean GE. Medical management of phimosis in children: Our experience with topical steroids. *J. Urol.*1999; 162: 1162–4. [PubMed] [Google Scholar]
[3] Dewan PA, Tieu HC, Chieng BS. Phimosis: Is circumcision necessary? *J. Paediatr. Child Health* 1996; 32: 285–9. [PubMed] [Google Scholar]
[4] Moreno G, Corbalán J, Peñaloza B, Pantoja T. Topical corticosteroids for treating phimosis in boys. *Cochrane Database Syst. Rev.*2014; 2: 925–7. [PubMed] [Google Scholar]

[5] Kuehhas FE, Miernik A, Sevcenco S, Tosev G, Weibl P, Schoenthaler M, et al. Predictive power of objectivation of phimosis grade on outcomes of topical 0.1% betamethasone treatment of phimosis. *Urology.2*012; 80: 412–416. [PubMed] [Google Scholar]
[6] Gairdner D. The fate of the foreskin, a study of circumcision. *Br Med J.1*949; 2: 1433–1437. [PMC free article] [PubMed] [Google Scholar]
[7] Deibert GA. The separation of the prepuce in the human penis. *Anat Rec.1*933; 57: 387–399. [Google Scholar]
[8] Ko MC, Lui CK, Lee WK, Jeng HS, Chiang HS, Li CY. Age - specific prevalence rates of phimosis and circumcision in Taiwanese boys. *J Formos Med Assoc.2*007; 106 (4): 302–307. [PubMed] [Google Scholar]
[9] Nascimento FJ, Pereira RF, Silva JL. Tavares A, Pompeo AC. Topical Betamethasone and Hyaluronidase in the Treatment of Phimosis in Boys: a Double - Blind, Randomized, Placebo controlled Trial. *Int Braz J Urol.2*011; 37 (3): 314–319.2nd. May - Jun. [PubMed] [Google Scholar]

Paper ID: MR231024131639 DOI: 10.21275/MR231024131639