

Research Article**Phimosis: Nonsurgical Versus Surgical Management**

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**ABSTRACT**

**Background:** *Phimosis is non-retractile foreskin or prepuce over the glans.. The two types of phimosis, physiological and pathological must be differentiated. The phimosis can be treated by conservative methods by application of topical steroid cream. The objective of this study was to compare the efficacy of nonsurgical separation with topical clobetasol propionate 0.05% cream therapy versus circumcision for treatment of phimosis.*

**Methods:** *This study was done on 104 patients presenting with symptoms of phimosis were included in the study. The clinical examination of prepuce and penis was done. The patients were classified according to Kirkiros classification. Patients were divided in 2 groups. Group A included patients underwent immediate circumcision and group B included patients underwent nonsurgical separation with topical clobetasol cream therapy for 1month and outcome was analyzed.*

**Results:** *Out of total 104 patients, immediate circumcision was done in 36 patients. Patient treated with clobetasol were 68 the complete response was obtained in 43 (63.23%) The phimotic ring disappeared in 63.23% patients, after 4 weeks of topical clobetasol propionate 0.05% cream application. No or partial response of clobetasol cream was found in 25 (36.76%) patients, they underwent circumcision.*

**Conclusions:** *This study concludes that nonsurgical separation with topical clobetasol cream therapy is quite effective for treatment of grade 0,1,2 &3 phimosis and Circumcision was only choice for grade 4&5 phimosis.*

**Keywords:** *Phimosis, adhesiolysis, clobetasol therapy, non-surgical separation, circumcision.*

## Introduction

Phimosis is non-retractile foreskin or prepuce over the glans. This is due to flimsy adhesions between glans and prepuce. The prepuccial skin is adherent to glans in initial years of life so it is non-retractile. With increasing age it separates from glans and becomes retractile.

Prepuccial skin has protective, immunological and erogenous functions. This skin contains fine touch receptors in abundance while glans has pressure receptors only. Prepuccial glands produce secretions which has lubrication, antibacterial and antiviral functions. Circumcision removes the prepuccial skin and these functions in an adult<sup>1</sup>. It appears to be essential to save the prepuce.

Nonsurgical modalities like topical steroids and adhesiolysis are effective, safe and cheap for treatment of phimosis in children<sup>2</sup>. In view of this nonsurgical modality, the present study was conducted to compare the role of nonsurgical separation with application clobetasol propionate 0.05% cream and circumcision in treatment of phimosis.

## Aim & Objectives

To evaluate the efficacy of nonsurgical separation with topical clobetasol propionate 0.05% cream therapy versus circumcision for treatment of phimosis.

## Material and Methods

This Prospective observational study was carried out at Department of Surgery, RKDF medical college and Research centre, Bhopal, Madhya Pradesh, India from January 2016 to January 2017.

**Inclusion criteria** – Patients presenting with symptoms like pain, itching, pus discharge due to balanoposthitis, ballooning on passing urine and inability to retract prepuce. These symptoms can be due to phimosis and were included in the study.

**Exclusion criteria-** Patients with comorbid like diabetes mellitus, patients refusing to give consent for circumcision if treatment of clobetasol fails; patients with carcinoma of penis were excluded.

The clinical examination prepuce and penis was done. The patients were classified according to Kirkiros classification.<sup>3</sup> In this classification of phimosis, 5 grades have been described according to the retractibility of prepuce.

**Table 1-Kirkiros classification of Phimosis**

Table 1-Kirkiros classification of Phimosis	
<b>Grade 0</b>	Full retraction of prepuce but may be limited by congenital adhesions to glans
<b>Grade 1</b>	Full retraction of prepuce but perpetual ring is tight behind glans
<b>Grade 2</b>	Partial retraction of prepuce so glans is partially exposed (not congenital adhesion)
<b>Grade 3</b>	Partial retraction of prepuce, meatus just visible
<b>Grade 4</b>	Slight retraction but some distance between tip and glans, i.e. neither meatus nor glans can be exposed
<b>Grade 5</b>	Absolutely no retraction of prepuce

Patients willing for circumcision were kept in Group A and Patients willing for conservative treatment and had given consent for circumcision, if conservative treatment fails were kept in group B.

The adhesions between glans were separated by gentle retraction of the prepuce. Forcible retraction of prepuce prohibited otherwise it would result in cracking of prepuce. After washing the prepuce with warm water, the method for local application of clobetasol propionate cream 0.05% is explained to the patient or parents. Retraction of prepuce is to be done many times in morning and evening followed by local application of clobetasol propionate cream. This retraction of prepuce and topical application of clobetasol propionate cream is continued for one month. After one month of treatment at home the clinical examination was done again and results were assessed according to retractibility of prepuce.

## Results

**Table 2-**Distribution of cases according to age group, surgical and non surgical group

Age Group	No. of cases (Phimosis)	Group A (Immediate Circumcision)	Group B (Conservative Clobetasol Therapy)
6 months-10 years	30	10	20
10-19 years	12	3	9
20-29 years	5	1	4
30-39years	7	2	5
40-49 years	10	5	5
>50 years	40	15	25
<b>Total</b>	<b>104</b>	<b>36</b>	<b>68</b>

**Table 3 –**Distribution of Group B according to treatment response of clobetasol therapy

Age Group	Group B (Conservative Clobetasol Therapy)	No or partial response to Conservative treatment ( Circumcision performed)
6 months-10 years	20	4
10-19 years	9	2
20-29 years	4	1
30-39years	5	2
40-49 years	5	1
>50 years	25	15
<b>Total</b>	<b>68</b>	<b>25</b>

**Table 4-** Grade wise distribution of patients and results.

Grade	Patients	Group A (Immediate Circumcision)	Group B (Conservative Clobetasol Therapy)	
			Complete Response	No or Partial Response
0	8	0	8(100%)	0
1	12	0	12(100%)	0
2	14	0	14(100%)	0
3	16	5	8(72.27%)	3(27.72%)
4	24	16	1(12.5%)	7(87.5%)
5	30	15	0(0%)	15 (100%)
<b>Total</b>	<b>104</b>	<b>36</b>	<b>43(63.24%)</b>	<b>25(36.76%)</b>

This study was done on a total of 104 patients with age varying from 6 months to 70 years. The patients were divided in 2 groups on random basis in circumcision group and nonsurgical separation of prepuce with topical clobetasol propionate 0.05% cream application group. These patients presented with smegma collection under the prepuce, balanitis, ballooning of prepuce and urinary tract infection. Many patients presented with combination of symptoms. Circumcision was performed in group A. In group B The response of treatment on prepuce retractibility is reassessed after one month in nonsurgical separation of prepuce with topical clobetasol propionate 0.05% cream application group. Patient didn't responded clobetasol therapy underwent circumcision after 1 month.

Out of total 104 patients, Immediate circumcision was performed in 36 patient and topical clobetasol propionate 0.05% cream application was started in 68 patients, the complete response was obtained in 43 (63.24%) and no or partial response in 25 (36.76%) patients. Grade 0, 1 & 2 phimosis completely responded to topical clobetasol propionate 0.05% cream .The phimotic ring disappeared in all the patients after 4 weeks of topical clobetasol propionate 0.05% cream application. No local or systemic side effects were observed in any of the patients. In patients with no or partial response 25 (36.76%) to the topical clobetasol therapy, circumcision was performed. But grade 3, 4 & 5 didn't completely respond to clobetasol propionate 0.05% cream. In grade 3

(27.72%), in grade 4 (87.5%) & in grade 5 phimosis (100%) required circumcision.

### Discussion

In physiological type, conservative treatment using a combined approach of non-surgical separation and topical steroid application is recommended<sup>4</sup>. In pathological type of phimosis, circumcision is the procedure of choice. Most of parents are anxious about phimosis in a child; reassurance that this condition can be treated with nonsurgical method will raise the confidence of parents.

Camille et al<sup>5</sup>, said that parent should be taught about cleansing the prepuce and glans with warm water and gentle retraction during bathing and urination. Various studies using topical steroid creams for conservative treatment of phimosis have yielded excellent results with 65% to 95% efficacy rate<sup>6</sup>.

The repeated topical steroids also cause atrophy and thinning of skin thus increasing stretchability of prepuce. This mechanism makes the prepuce ring loose. Various topical steroids used in conservative treatment of phimosis are betamethasone, hydrocortisone, triamcinolone, mometasone and clobetasol. Topical steroid creams are applied twice a day. Betamethasone is the most common steroid cream used. In 2008 Palmer et al<sup>7</sup> stated that, regular preputial retraction and Betamethasone cream 0.05% applied twice a day for 4 week period has consistently shown good results.

Topical steroids therapy cost is much less than circumcision<sup>8</sup>. The nonsurgical separation and topical steroid therapy avoid psychological stress of circumcision. The retractibility of prepuce may reduce with time and phimosis may tend to reoccur. The period of application of topical steroid application varies in different studies. But most studies recommend 4 weeks treatment with topical steroid cream as safe<sup>9</sup>.

In 2013, Lee and Lee<sup>10</sup> recommended skin stretching and topical clobetasol propionate 0.05% cream can be treatment of first choice instead of

circumcision for boys with severe phimosis. Our study confirms the efficacy of topical clobetasol propionate 0.05% cream and nonsurgical stretching in conservative treatment of phimosis in grade 0,1,2 & 3, but in grade 4 & 5 circumcision is only choice.

### Conclusion

The choice of procedure for phimosis should be prepuce salvage but for grade 4 & 5 phimosis, circumcision is only choice and nonsurgical separation with topical clobetasol therapy is good alternative to circumcision for treatment of phimosis in grade 0,1,2 and 3 phimosis.

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