OUTCOME OF TOPICAL STEROID IN TREATMENT OF PHIMOSIS

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ABSTRACT

BACKGROUND:

Topical steroid is effective alternative to circumcision in boys with phimosis. We evaluated the effectiveness of topical steroid therapy as primary treatment in patients with phimosis.

MATERIAL AND METHODS

The study was conducted from January 2010 to Jan 2013 in institute of kidney diseases Hayat abad medical complex Peshawar. A total of 38 male children who had a Kikiros retractability grade of 4 or 5 phimosis were included in the study. Topical steroids (0.05% clobetasol propionate cream) were applied twice a day. The outcome was defined as successful if the prepuce was retractable with complete exposure of the glans after 4 to 6 weeks of treatment and there was no recurrence at 6-month follow up.

RESULTS: A total of 38 male children with mean age of 2.11 ± 1.78 years (range, 3 months to 12 years) were allocated to treatment with topical steroid cream. Three patients were excluded for lost to follow up. A successful result (i.e., full retraction of the foreskin), after 4 or 6 weeks treatment with topical cream was achieved in a total of 29 (82.85%) patients. The remaining 6 patients (17.14%) showed no response. Three had circumcision. No significant local or systemic side effects were noted with the administration of the topical steroid

CONCLUSION: Treatment with topical application of 0.05% clobetasol propionate cream and skin stretching for 4-6 weeks is a safe, simple, and effective procedure with no significant side effects for severe phimosis in boys.

KEY WORDS: phimosis, topical steroids, circumcision

INTRODUCTION

“Phimosis” is inability to withdraw the narrowed penile foreskin or prepuce behind the glans penis^{1,2}. It is of two types congenital or physiologic and acquired or pathologic. The physiological Phimosis occurs due to natural adhesions between epithelial layers of the inner prepuce and glans preventing the retraction of the foreskin. More than 90% can be retracted by the time boys enter school and almost completely retracted when they reach puberty without the need for surgical treatment³. Pathologic phimosis is a medical problem in children and adults, defined as a circular band of tight prepuce preventing full retraction⁴. The causes of pathologic Phimosis include dermatitis, trauma, balanitis xerotica obliterans (BXO), scarring, or postoperative complication after circumcision⁵.

Parents usually bring their children stating that the child's foreskin could not be retracted over the glans. Other possible emergency department presentations include urinary retention, signs and symptoms of balanoposthitis and painful erections. There are two types of treatment of Phimosis, surgical and non surgical. The surgical treatment is circumcision which is considered the treatment of choice. Analyses of medical records carried out in England and Western Australia revealed that medically indicated circumcisions were seven times more than the expected incidence of phimosis in children less than 15 years of age^{6,7} implying thereby that there is a high rate of unnecessary circumcisions⁸. Circumcision is not complications free and there is increased risk of bleeding, infection, meatal stenosis and urethrocuteaneous fistulae when done for phimosis, particularly kikiros Grade IV

and V of severity⁵. Several studies have suggested a new conservative approach (topical steroid) as an effective and safe alternative to surgical intervention, with a success rate ranging from 67% to 95%, and no side effects^{9,10}.

Topical steroids treat phimosis by three mechanisms. It cause thinning of skin and improve the elasticity of the foreskin by decreasing synthesis of hyaluronic acid, which has an antiproliferative effect on the epidermis¹¹. It also inhibits the production of the mediators of skin inflammation, prostaglandins and leukotrienes¹². Finally, it has a lubricant effect which allows boys to retract the foreskin easily¹⁰.

Circumcision is performed on ritual basis in our setup, but as mentioned above, there is increased risk of complication in case of phimosis. So this risk of complication can be reduced when performed after successful treatment with topical steroid conservative approach. Moreover no local clinical data is available on the outcome of topical steroid in treatment of phimosis, though his well known results.

MATERIAL AND METHODS

We performed a prospective study to evaluate clinical response to topical steroid cream for patients with phimosis. The study was conducted from January 2010 to Jan 2013 in institute of kidney diseases Hayat abad medical complex Peshawar. At first outpatient department visit, a clinical examination was performed and the category of phimosis was evaluated according to the Kikiros and Woodward classification⁵. A total of 38 patients categorized as Kikiros and Woodward grade 4(slight retraction, but neither glans nor meatus can be exposed) or grade 5(absolutely no retraction) were included in the study. Patients who had partial exposure of the glans or partial retraction of the prepuce were excluded from the analysis. For boys under 7 years the parents were instructed to apply cream to the slightly retracted foreskin and to massage gently for 30 seconds twice a day for 4 consecutive weeks. Boys older than 7 years usually performed the retraction by themselves.

No occlusive dressings were used and no attempt was made forcibly to retract the prepuce, which would cause splitting and bleeding of the foreskin.

After full treatment patients were re-assessed by using the classification of Kikiros and Woodward, by a single urologist. The outcome was defined as successful if the prepuce was retractable with complete exposure of the glans after 4 to 6 weeks of treatment and there was no recurrence at 6-month follow up. The presence of any local or systemic side effects, such as striae, pigmentation changes, telangiectasia, and hypertrichosis, were checked.

RESULTS

A total of 38 male children with mean age of 2.11 ± 1.78 years (range, 3 months to 12 years) were allocated to treatment with topical steroid cream. Three were excluded for lost to follow up, inadequate use of the cream or for religious circumcision. A successful result (i.e., full retraction of the foreskin), after 4 or 6 weeks treatment with topical cream was achieved in a total of 29 (82.85%) patients. The remaining 6 patients (17.14%) showed no response. Surgical intervention was also considered in three patients who showed no response to topical steroids. The parents of three non responders refused further treatment. No significant local or systemic side effects, such as striae, pigmentation changes, telangiectasia, and hypertrichosis, were reported with the administration of the topical steroid.

DISCUSSION

Local application of topical steroid is an effective and safe conservative treatment for phimosis. It makes circumcision unnecessary in the majority of patients whose parents are unwilling to allow immediate circumcision for phimosis.

In our study, we report that local application of clobetasone Propionate 0.05% is an effective and safe conservative treatment in patients with phimosis. The success rate in our study was 29 (82.85%), which is low compared to the study of

Chu CC et al¹³ who observed a complete response greater than 95%. Similarly Zavras N et al¹⁴ included a total of 1185 boys with a diagnosis of phimosis in his study. He achieved Successful results in 1079 (91.1%) patients including boys with mild balanitis xerotica obliterans. The reasons for our lower success rate are many; first we included boys with severe phimosis, i.e., Kikiros retractability grade 4 or 5. Also patients who achieved partial retraction after treatment were also excluded. The success rate in the current study is higher in contrast to the studies conducted by Kuehhas et al¹⁵ who included 36 patients in their studies and observed complete response in 25(69%) patients. Literature reporting application of steroid, number of patients and success rates is compared with current study in table 1.

No	Study	Topical steroid	Application period	No. Of patients	Cured
1	Chu et al ¹³ (1999)	Clobetasol propionate 0.05%	4-6	276	261(95%)
2	Zavras et al ¹⁴ (2008)	Fluticasone propionate 0.05%	4-8 wk	1,185	1,079 (91%)
3	Kuehhas et al. ¹⁵ (2012)	Betamethasone valerate 0.1%	8 wk+2 wk	36	25(69%)
4	Ashfield et al. ¹⁶ (2003)	Betamethasone valerate 0.1%	6 wk	194	168 (87%)
5	Current study	Clobetasol propionate 0.05%	4-6 wk	38	29 (82.85%)

TABLE 1. Literature reporting application of steroid, number of patients and success rates

We also noted that there were no statistical differences in success rates among patients with phimosis alone, coexisting balanitis or a history of UTI. In the study of Ashfield JE¹⁶, 194 patients received topical steroids as primary treatment. Of these 194 patients 25 had coexisting balanitis and 4 had a history of urinary tract infection. He also reported that there were no statistical differences in success rates among patients with phimosis alone, or coexisting balanitis and or a history of UTI. In contrast, Chan Ho Lee et al¹⁷ noted that the retractability of the foreskin was significantly

lower in the patients who had a history of balanoposthitis, smegma, ballooning of the prepuce, or UTI before treatment ($p<0.001$, $p<0.001$, and $p=0.02$, respectively).

Exactly how topical steroids contribute to resolving phimosis remains speculative and multifactorial. Several studies have suggested possible mechanisms involved in the action of topical steroids^{10, 18}. The reported topical steroid agents, regimens, and the success rate of treatment have varied.^{19, 20} Moreover, the potency of the topical steroids used ranges from class I to class VII. Using stronger topical steroids may carry a higher risk of adverse effects, including iatrogenic Cushing syndrome, adrenal suppression, delayed growth and skin atrophy, which have been observed in children treated with topical or intranasal steroids.^{21, 22}

Thus, it is practical to use moderately potent steroids first, since they are suggested by our study to be as effective as highly potent steroids. As in other studies of topical steroid in phimosis^{23, 24} we found no adverse effect with moderate potent steroid.

In this study, we observed that short-term application of a topical steroid and retraction of the foreskin is beneficial for the treatment severe phimosis. That is why we strongly recommend 4-6 week application of topical steroid twice a day for the treatment of severe phimosis.

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