

Topical steroid therapy for phimosis

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WEBSTER TM, LEONARD MP. Topical steroid therapy for phimosis. *The Canadian Journal of Urology*. 2002;9(2):1492-1495.

Introduction: Circumcision has been the traditional treatment for phimosis. Recent reports of medical management of phimosis with topical steroids quote success rates of 67%-95%. We present our results with topical steroid therapy for treatment of phimosis.

Materials and methods: Retrospective review of 69 boys between the age of 3 and 13 years (average 7.4) who were referred to Urology clinic over a one year period (August 1999-2000) with phimosis. Boys without a distal preputial ring were excluded. A course of triamcinolone cream was prescribed and parents/patients were instructed to apply it to the preputial outlet twice daily for one month. Six weeks after treatment initiation patients were reassessed. Results were classified as follows: Full retraction (FR)-entire glans and coronal margin seen, Moderate retraction (MR)-proximal glans seen, residual preputial adhesions, Partial retraction (PR)-distal glans and meatus seen, and Failure (F)-no change. FR, MR, and PR were considered successful outcomes. Statistical analysis was performed with Splus software using the prop.test and ordinal logistic regression procedures.

Results: Follow-up ranged from 1-12 months, and 8 patients were lost to follow-up. Of the remaining 61 boys, 82% (12 FR, 26 MR, 12 PR) were successfully managed with topical steroid (95% confidence interval: 69%-90%). Scarring on examination was observed to negatively impact outcome (92% versus 67%) and was statistically significant using ordinal logistic regression (Chisquare test=4.48, p-value=0.034). Two boys with severe balanitis xerotica obliterans (BXO) and two boys with buried penis and penoscrotal webbing failed treatment and required surgery. There was an association noted between older age and poorer outcome but this was not statistically significant. There were no local or systemic side effects noted.

Conclusions: Local application of steroid cream to the phimotic foreskin may allow some degree of retraction and avert the need for circumcision. Although the length of follow-up is insufficient to decree ultimate success, topical steroid appears to be a safe and effective treatment for boys over three years of age with evidence of a tight preputial ring. Boys with severe BXO or buried penis and penoscrotal webbing should be considered primarily for surgery.

Key Words: phimosis, treatment, topical steroids

Accepted for publication February 2002

Acknowledgement for statistical analysis to Mr. Keith O'Rourke, Department of Surgery and Clinical Epidemiology Unit, University of Ottawa.

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Introduction

Phimosis is a condition in which the foreskin cannot be retracted. The majority of male newborns have physiological phimosis but by three years of age the incidence decreases to 10%.^{1,2,3} True pathologic phimosis indicates the presence of a tight distal preputial ring. Traditionally, circumcision has treated this. Recent

reports of medical management of phimosis with topical agents quote success rates of 67%-95%.⁴⁻¹⁰ In this report we present our initial results with topical steroid therapy.

Materials and methods

After receiving approval from the hospital's ethics review board we retrospectively reviewed the outcome of 69 boys between the ages of 3 and 13 years (mean 7.4) treated for phimosis between August 1999 and August 2000. Boys whose foreskins did not have a tight preputial ring and boys younger than three were not offered treatment. All patients with a true phimosis were considered for topical steroid therapy. Parents and patients were fully informed of the various treatment options. Those wishing to try conservative treatment received a one-month course of triamcinolone steroid cream (Kenalog)[®]. Parents were instructed to gently retract the foreskin and apply the cream to the preputial ring twice daily. Six weeks after treatment initiation patients were reassessed.

Results were classified as follows: Full retraction (FR) - the entire glans and coronal margin seen; Moderate retraction (MR) - proximal glans seen, but residual inner preputial adhesions remain; Partial retraction - retraction to distal glans with a clearly visible meatus, and Failure (F) - no improvement. FR, MR, and PR were considered successful outcomes.

Statistical analysis was performed with Splus software using the prop.test and ordinal logistic regression procedures.¹¹

Results

The patients were categorized based on the history and physical exam. All boys (69) included in the treatment group had a tight distal preputial ring.

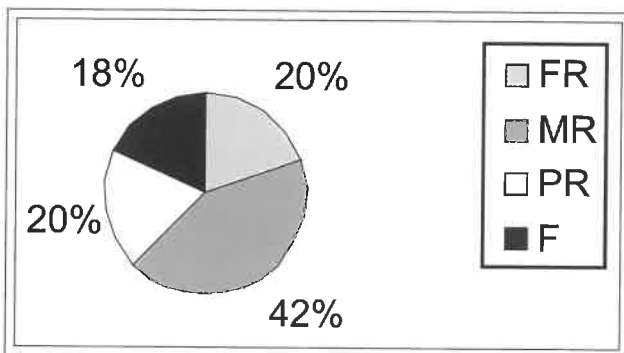


Figure 1. Overall results of treatment for phimosis with triamcinolone cream. N=61. FR= full retraction, MR= moderate retraction, PR= partial retraction, F= failure.

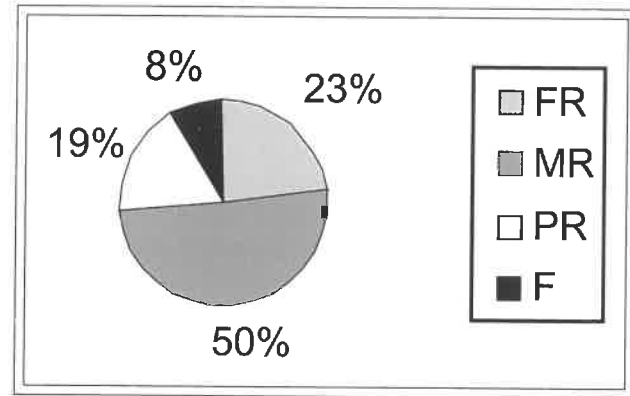


Figure 2a. Results for boys without scarring. N=48. FR= full retraction, MR= moderate retraction, PR= partial retraction, F= failure.

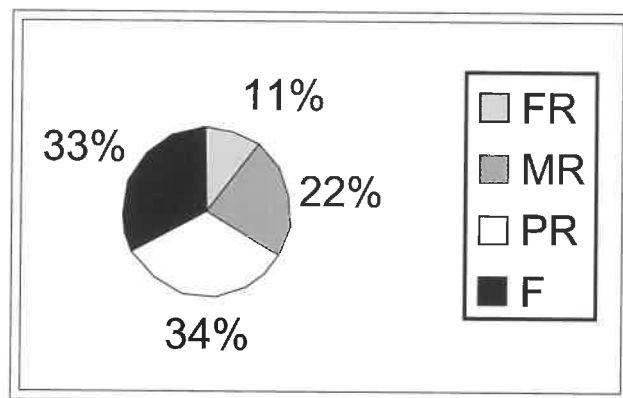


Figure 2b. Results for boys with scarring. N= 9. FR= full retraction, MR= moderate retraction, PR= partial retraction, F= failure.

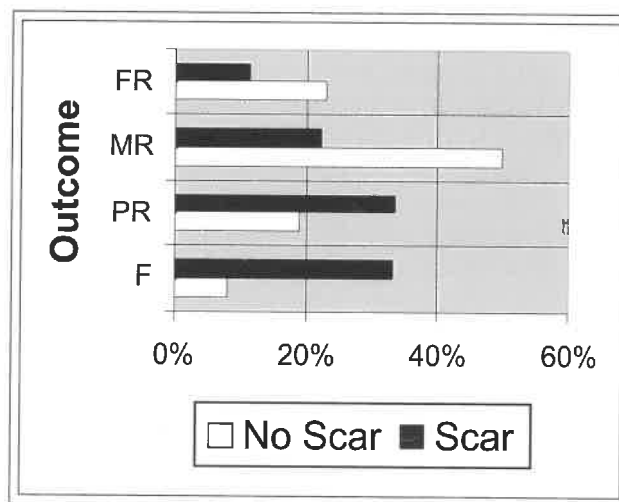


Figure 2c. Impact of scar on outcome. N=61. FR= full retraction, MR= moderate retraction, PR= partial retraction, F= failure.

Physical exam identified eleven boys with evidence of scarring at the preputial outlet and two boys were noted to have severe balanitis xerotica obliterans (BXO). A concealed or buried penis with penoscrotal webbing was noted in two boys.

Eight patients did not return for follow-up. For the remaining 61 boys 82% (50/61) were successfully managed with topical steroid therapy (12 FR, 26 MR, 12 PR) (95% confidence interval: 69%-90%) (Figure 1). There were no local or systemic side effects noted.

Boys with evidence of scarring on examination responded less well to treatment. Ninety-two percent (44/48) (11FR, 24MR, 9PR) of boys without scarring had successful outcomes compared to only 67% (6/9) (1FR, 2MR, 3PR) of those with scar (Figure 2a, 2b, 2c). This was statistically significant using ordinal logistic regression (Chisquare test=4.48, p-value=0.034). Two boys with severe BXO and two boys with buried penis and penoscrotal webbing failed treatment and required circumcision.

There was an association seen between increasing age and poorer outcome although this was not statistically significant.

Discussion

Many referrals to a pediatric urology centre are made to address concerns over a patient's foreskin. The majority of newborns and infants have physiological phimosis and the parents can safely be reassured. We know that of the 10% of boys over 3 years of age with persistent phimosis 9% will resolve by adolescence.¹⁻³ It is very difficult to predict the 1% who will have persistent phimosis. A great deal of anxiety arises over concerns about the appearance and function of a boy's penis. At our centre we assess many boys who are referred with normal foreskins. Some parents are concerned about the appearance of the prepuce while others clearly have a hidden agenda and desire circumcision regardless of the foreskin's appearance. We only consider treating those boys over 3 years of age whose foreskin has a tight distal preputial ring and is not retractable. In the past, the treatment for persistent phimosis was circumcision. Parents are pleased to learn that there is a conservative medical alternative.

Numerous studies have been done recently reporting success rates between 67% and 95% with topical application of steroid or non-steroidal anti-inflammatory cream⁴⁻¹⁰ to the preputial outlet. Medical management has been shown to be the most cost-effective strategy in the initial treatment of phimosis.¹² Golubovic et al. demonstrated in a

placebo-controlled study that topical steroid application is superior to placebo.⁴ It is postulated that the topical steroid cream works through its inhibition of prostaglandin synthesis and subsequent decrease in local inflammation.¹³ Chih-Chun et al. demonstrated that topical steroid therapy is superior to manual retraction alone.⁹ Our overall success rate of 82% reaffirms the findings of previous studies (Figure 1).

Scarring at the preputial outlet was an important objective finding which held prognostic implications. The group without scarring achieved success 92% of the time and demonstrated an increased degree of improvement.

Other studies have suggested the impact of BXO on outcome.^{4-6,12} Although our numbers were low, both patients with BXO ultimately required circumcision. BXO is a term used to describe lichen sclerosis of the male genitalia. Van Howe documented that the rate of failure with topical treatment closely approximated the rate of histologically defined BXO on examination of the excised foreskins. A recent study by Kiss et al.¹⁴ suggested that early and intermediate stage BXO was amenable to topical steroid cream while late stage disease was unchanged.

We also note that two boys with buried penis and penoscrotal webbing were included in the study. An iatrogenic trapped penis can occur secondary to previous surgery or may be associated with obesity and large prepubic fat pads. Attachment of the penile skin to the underlying fascia of the corporeal body is a less common cause of buried penis.¹⁵ These boys had not had previous surgery but had tight foreskins, significant penoscrotal webbing and large prepubic fat pads consistent with a concealed or buried penis. The gross appearance of buried penis is similar to phimosis and these two boys were included in the treatment group. However, their results were unsatisfactory and they went on to circumcision. Chih-Chun et al. also noted poor results to treatment in those boys with buried penis.⁹

Monsour et al. noted treatment failures tended to occur in older boys and they hypothesized that this was due to poor compliance.¹⁰ Our results also indicate an association which was not statistically significant between increasing age and treatment failure. Although we instructed parents to apply the cream or at least oversee its application we support Monsour et al's theory. Orsola et al. found that persistent and recurrent phimosis occurred in noncompliant patients.¹⁶

The main limitations of this study are the short length of follow-up, the low number of patients and

the lack of controls. However, our results are statistically and clinically significant. These patients were seen in clinic over a one-year period and as a result the longest follow-up was one year. There were not any cases identified who were successfully managed initially who failed in the course of follow up. However, it is conceivable that some of these boys will require further treatment. From our experience, ongoing penile physiotherapy with gentle retraction and advancement of the foreskin with each bathing and void is necessary to ensure ongoing success.

Conclusions

For those boys over 3 years of age with evidence of a tight distal preputial ring local application of steroid cream to the foreskin may allow some degree of resolution and avert the need for circumcision. Although the length of follow-up is insufficient to decree ultimate success, our study suggests that topical steroid application is a safe and effective treatment for phimosis. Evidence of scarring at the preputial outlet may predict a diminished response to treatment. Boys with either severe BXO or a buried penis should be considered primarily for surgery. □

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