

Original Paper

Treatment of Phimosis with Topical Steroids as Alternative to Circumcision

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Background: Topical steroids have been advocated as an effective economical alternative to circumcision in boys with phimosis. This study was aimed at evaluating the effectiveness of topical steroid therapy as primary treatment of phimosis.

Methods: Between December 2003 and February 2005, 182 of the 231 boys aged 14 years or younger who were referred to us with phimosis, were treated with a six weeks course of topical steroids as primary treatment for phimosis. The outcome of treatment was evaluated up to 6 months from the initiation of therapy.

Results: Out of the 182 patients treated with topical 0.1% betamethasone ointment, 141 (77.5%) successfully completed the follow up period. At follow-up 126 patients (89%) had a successful outcome and were able to avoid circumcision. The remaining 15 patients (11%) had little or no improvement and subsequently underwent circumcision.

Conclusion: Topical steroids are becoming the standard conservative measure for treating phimosis. Our study supports this trend, with an overall efficacy of 89%.

Introduction

Phimosis refers to a non-retractile prepuce secondary to a tight distal preputial ring. In neonates natural adhesion between the inner foreskin and the glans causes physiological phimosis that is often confused with pathological phimosis. The majority of male newborns (96%) have physiological phimosis¹. Within 2 to 3 years, the foreskin detaches from the glans following the formation of keratinized pearls². This process, together with intermittent erections, allows the foreskin to separate, resulting in physiological retraction. In 80% to 90% of uncircumcised boys the foreskin can be retracted over the glans by age 3 years. Circumcision has been the traditional treatment for phimosis or non-retractile foreskin. Topical steroids have been advocated as a safe and economical alternative to surgical intervention with success rate of 67% to 95%³⁻¹². During a 2 year period we used topical steroids therapy as the primary treatment for children referred with phimosis. We report the results of conservative management of phimosis using topical steroid therapy in 182 children.

Patients and Methods

Between December 2003 and February 2005, 231 children were referred for circumcision

because of a history of phimosis, balanitis or urinary tract infection (UTI), or for traditional reasons. Apart from those cases with severe voiding problems, all patients were offered topical steroids ointment. Parents of young children with physiological phimosis were educated about this condition and told that no treatment was required. After treatment options were discussed with the patients and parents or guardians, the patients were prescribed 0.1% betamethasone ointment to be applied to the prepuce twice daily for 6 weeks. In young children the parents were instructed to apply the medication. We followed up each patient for six months from the start of the treatment. The patients were assessed for foreskin retractability and need for further therapy, including circumcision. Successful therapy was defined as a retractile prepuce, patient/or parent satisfaction, and the express opinion of the consultant that circumcision was unnecessary. Failure of therapy was defined as persistent phimosis with inability to retract the outer foreskin.

Results

A total of 231 boys aged 1 to 14 years old and a median age of 5 years were referred for consideration of circumcision. Of these, 49 patients did not receive topical steroid treatment,

Table 1. Outcomes in 231 boys referred for consideration of circumcision

Age in yrs.	No. Pts.		No. Treatment		No. Results of Topical Therapy	Steroid
		None	Immediate Circumcision	Topical Steroids	Successful	Failed
1	25	14	0	8	8	0
2	28	11	1	10	8	2
3	32	9	1	16	14	2
4	29	2	0	20	18	2
5	35	3	1	23	20	3
6	18	1	0	15	14	1
7	16	0	0	14	12	2
8	10	0	1	9	8	1
9	15	1	1	10	9	1
10	7	0	1	6	6	0
11	7	0	0	4	4	0
12	7	1	0	5	5	0
13	2	1	0	1	0	1
14	0	0	0	0	0	0
Totals	231	43	6	141	126	15

(NOTE: 41 patients were lost to follow-up.)

43 (16.4%) had physiological phimosis and parents understood that there was no need for any intervention. Six (2.3%) were scheduled for circumcision, 5 of them due to parents' wish and one because of a very severe phimosis associated with urine retention and recurrent infection).

A total of 182 patients were treated initially with a course of topical steroids (Table 1). Of all patients, 141 (77.5%) successfully completed the follow up period. At follow-up 126 patients (89%) had a successful outcome and were able to avoid circumcision. The remaining 15 patients (11%) had little or no improvement and subsequently underwent circumcision.

Discussion

While infant circumcision has been a common practice in North America, about 80% of the world population does not practice routine neonatal circumcision¹³. Even in the United States and Canada the rates of neonatal circumcision, once estimated to be 60% to 90%, are decreasing^{13, 14}. As a result, there is the potential for an increase in the frequency of children with foreskin problems. One of the difficulties that arise when studying phimosis is the lack of a clear definition, for example differentiation between pathological phimosis and physiological nonretractile foreskin¹⁵.

Until a few years ago surgery in the form of circumcision was the only option available to a patient with phimosis. With the introduction of topical steroids for the treatment of phimosis, circumcision has become a subject of debate. Although highly effective, circumcision is associated with potential morbidity, such as pain, infection, scarring and urethral injury. These surgical complications are rare but there are other reasons to attempt to preserve the foreskin.

Surgical intervention requires anesthesia, which carries its own set of risks and complications. Furthermore, the appearance of a circumcised phallus may not be an acceptable outcome for the patient/parents due to differences in cultural norms. In recent years the use of topical steroids has been advocated as a safe, effective and economical alternative to surgery.³⁻¹² Golubovic et al³ reported a 95% success rate in 20 boys treated with betamethasone cream. However, Monsour et al⁴ did not find topical steroids quite as effective. In 24 boys with phimosis 16 (67%) who received topical steroid therapy subsequently had a normal appearing foreskin that was easily retracted. In a series of 124 children, Orsola et al⁵ noted that 61 boys had a phimotic but retractile prepuce, 37 had a nonretractile phimotic ring and 39 had a pinpoint opening.

Six months following treatment with topical steroids, 90% of these patients had an easily retractile prepuce without a phimotic ring. Similarly, after treating 111 patients with phimosis with betamethasone, Wright reported an 80% success rate⁶.

The severity of the disease process associated with the phimosis may be important. Webster and Leonard¹² found that scarring observed on initial examination was associated with a decrease in efficacy of topical steroid treatment from 92% to 67%, and concluded that boys with severe balanitis xerotica obliterans should be considered for surgery primarily. A small prospective study comparing steroid application to placebo in uncircumcised children with balanitis xerotica obliterans showed improvement in the early and intermediate histological stages of the disease only. We proceeded directly to circumcision if balanitis xerotica obliterans was identified at initial consultation and, therefore, cannot comment on

the efficacy of steroid treatment for this condition.

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that of circumcision. Webster and Leonard¹² noted a trend toward higher failure rates in older boys and theorized that this outcome might be due to decreased compliance with topical therapy. We also saw a trend in the older group but in the opposite direction. However, as with the findings of Webster and Leonard, our trend did not prove to be statistically significant.

Other topical agents have also been used to treat phimosis. Atilla et al¹⁷ used nonsteroidal anti-inflammatory ointment for phimosis as an alternative to surgery and/or steroid application. Of 32 patients treated 24 responded to the diclofenac sodium application. Improvement was characterized by almost normal foreskin retractability and appearance. In our series 89% of 141 patients with phimosis treated with topical steroid were able to retract the foreskin appropriately after treatment.

Conclusion

Topical steroids are becoming the standard conservative measure to treat patients with phimosis. With an overall success rate of 89%, our series provides further support for the use of topical steroids for boys 1 to 14 years old presenting with phimosis.

References

1. Gairdner, D.: The fate of the foreskin. A study of circumcision. *Brit Med J*, 2: 1433, 1949
2. Deibert, G. A.: The separation of the prepuce in the human penis. *Anat Rec*, 57: 387, 1933
3. Golubovic, Z., Milanovic, D., Vukadinovic, V., Rakic, I. and Perovic, S.: The conservative treatment of phimosis in boys. *Br J Urol*, 78: 786, 1996
4. Monsour, M. A., Rabinovitch, H. H. and Dean, G. E.: Medical management of phimosis in children: our experience with topical steroids. *J Urol*, 162: 1162, 1999
5. Jo. Orsola, A., Caffaratti, J. and Garat, J. M.: Conservative treatment of phimosis in children using a topical steroid. *Urology*, 56: 307, 2000
6. Wright, J. E.: The treatment of childhood phimosis with topical steroid. *Aust N Z J Surg*, 64: 327, 1994
7. Van Howe, R. S.: Cost-effective treatment of phimosis. *Pediatrics*, 102: E43, 1998
8. Ter Meulen, P. H. and Delaere, K. P.: A conservative treatment of phimosis in boys. *Eur Urol*, 40: 196, 2001
9. Chu, C.-C., Chen, K.-C. and Diao, G.-Y.: Topical steroid treatment of phimosis in boys. *J Urol*, 162: 861, 1999
10. Berdeu, D., Sauze, L., Ha-Vinh, P. and Blum-Boisgard, C.: Cost-effectiveness analysis of treatments for phimosis: a comparison of surgical and medicinal approaches and their economic effect. *BJU Int*, 87: 239, 2001
11. Shankar, K. R. and Rickwood, A. M.: The incidence of phimosis in boys. *BJU Int*, 84: 101, 1
12. Webster, T. M. and Leonard, M. P.: Topical steroid therapy for 'phimosis. *Can J Urol*, 9: 1492, 2002
13. Witfield, H. N., Frank, J. D. and Williams, G.: The prepuce. *BJU Int*, suppl., 83: 1, 1999
14. Circumcision policy statement. American Academy of Pediatrics. Task Force on Circumcision. *Pediatrics*, 103: 686, 1999
15. Rickwood, A. M. and Walker, J.: Is phimosis overdiagnosed in boys and are too many circumcisions performed in consequence? *Ann R Coll Surg Engl*, 71: 275, 1989
16. Kiss, A., Csontai, A., Pirot, L., Nyirady, P., Merksz, M. and ' Kiraly, L.: The response of balanitis xerotica obliterans to local steroid application compared with placebo in children. *J Urol*, 165: 219, 2001
17. Atilla, M. K., Diindaroz, R., Odabas, O., Oztiirk, H., Akin, R. and / Gokfay, E.: A nonsurgical approach to the treatment of phimosis: local nonsteroidal anti-inflammatory ointment application. *J Urol*, 158: 196, 1997.