ABSTRACT

Objective: review of currently available literature to help identify the effectiveness of topical steroids in the treatment of phimosis.

Method: retrospective and prospective study, including children referred to pediatric surgery clinic, with phimosis at Prince Charles Hospital, Merthyr Tydfil, Wales. Betamethasone cream 0.025% topical application once per day at night time was prescribed.

Outcome measures: The outcomes of the response were classed as follows: (1) none for no response at all, (2) moderate for some improvement of phimosis, (3) good for children who need not circumcision after the steroid cream.

Results: On average 51.14% of patients were circumcised post steroidal therapy with a majority of those patients initially presenting with a ‘Tight Foreskin’ (68.75%).

Conclusion: Betamethasone cream in the younger age group with minor adhesions offers a good first line treatment.

INTRODUCTION

Male circumcision is the surgical removal of all or part of the foreskin of the penis. The WHO has estimated that 664,500,000 males aged 15 and over are circumcised (30% global prevalence), with almost 70% of these being Muslim. Reasons for circumcision are commonly parental preference and religious belief for newborn circumcision. At a later age the indications are persistent phimosis and prophylaxis against urinary tract infections. The prepuce is, at birth, not retractable, but develops to be naturally retractable in 80-90% of uncircumcised males by the age of 3 years.

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Literature review has shown initial treatment of phimosis with topical steroids such as betamethasone to have success rates ranging from 67%-95%\(^3\).

Our study further expands on the currently available literature to help identify the effectiveness of topical steroids in treating phimosis, and how many eventually require surgical intervention.

**METHOD**

We performed a prospective and retrospective study of those children who attended pediatric outpatient clinic at Prince Charles Hospital, between June 2008 and May 2009, who were referred due to phimosis.

During these consultations, those children who were deemed to have phimosis were first started on 0.025% betamethasone cream, applied once daily, for 6 weeks. They were then followed up and reassessed on progress. A low concentration of Betamethasone has been used to decrease the chances of adverse effects from steroid therapy for this age group.

Types of phimosis prior to treatment were classified as (1) partly retractable foreskin (minor adhesions), (2) mostly retractable and (3) tight foreskin (Non retractable).

The outcomes of the response were classed as follows: (1) none, (2) moderate, (3) good. Based on these results, patients were then assessed on the need for circumcision.

**RESULTS**

There were a total of 72 patients, 45 of whom had completed their course of betamethasone and were followed up to determine the need for circumcision. 3 patients did not attend follow up and the remainders are still in the follow up period, all of these were excluded from our study. Out of the 45 followed up patients, 23 needed circumcision and 22 did not.

Ages ranged from 1 to 11 year, with a mean age of 4.85 years (median age 5); **graph 1**.

Dividing the groups according to the severity of adhesions; **graph 2** showed that 11 out of 16 with a tight foreskin needed a circumcision whereas only 6 out of 18 with minor adhesions needed a circumcision; **graph 3**. Our results differ from a similar study which concluded that pretreatment retractability score did not affect treatment \(^5\).

A greater percent of children over 5 years needed circumcision (71%) compared with the 5 years and under group (39%); **graph 4**. A similar study looking at betamethasone therapy in the under 3s showed that 74% had a fully retractable foreskin within 4 weeks of therapy with a further 18% within 2 months\(^3\).

This could suggest that patients with adhesions should be picked up earlier and betamethasone treatment started sooner for a better outcome with a lower incidence of surgical intervention. It also implies that the younger...
population have less tight foreskins and therefore will have better results with steroids.

The majority of the population; 28 (62.2%) was under 5. Of those, 18 had minor adhesions – which was the predominant presentation in that age group. The remaining 37.8% of the sample population was aged over 5. The most common clinical presentation in this age group was ‘Tight Foreskin’ (41.2%). On average 51.14% of patients were circumcised post steroidal therapy – with a majority of those patients initially presenting with a ‘Tight Foreskin’ (68.75%); graph 5.

In all cases there were no adverse local or systemic effects from the steroid therapy.

DISCUSSION

Our study showed that 51.1% of the patients needed circumcision, and 48.9% benefitted from steroidal therapy, and subsequently didn’t require surgical intervention. Compared with similar studies, our results show a lower success rate with betamethasone cream. These studies showed success rates as high as 90%\(^6\), 87%\(^7\), 81.3 %\(^5\). A greater percentage of children over 5 needed circumcision (71%), as opposed to those aged 5 and under (39%). In total, 68.75% of patients with a ‘tight foreskin’ needed circumcision – advocating an earlier intervention period for such children.

The variables between our study and the ones listed above are a few, namely: the number of times a day the steroid was applied and strength of the topical agent used. The above studies encouraged patients to apply the cream more frequently (2-3 times/day) and use a higher strength (0.05%), whereas our patients used a lower strength of 0.025%, applied once a night. The BNF for pediatrics doesn’t recommend a particular dose for circumcision, but suggests for the cream to be applied 1-2 times daily, at strength of 0.1% for significant skin conditions.\(^8\)

Another issue to be considered is compliance – we have no evidence on how compliant our patients were with the betamethasone treatment. Furthermore – several patients did not attend follow-up appointments, possibly skewing the final results. A few parents would also have declined circumcision for their children.

CONCLUSION

Betamethasone cream in the younger age group with minor adhesions offers a good first line treatment as it is safe, inexpensive, and we have shown it to have good results, reducing the need for circumcisions, particularly at a later age. Further studies are proposed to see how the results change with a greater sample population, increasing the strength and frequency of betamethasone applied, whilst monitoring for potential local/systemic side effects.
REFERENCES


LEGENDS

Graph One: Demonstrating the divide in the sample population by age
Graph two: Clinical presentations of the sample population across all ages

Graph three: patients who did and didn’t require surgical intervention

Graph four: Number of children needing surgical intervention after steroidal therapy - by age
Graph five: Divide by Age (years) across the different clinical presentations in the sample population.