

## Case Report

### Balanitis in Down syndrome-A case from Malaysia

Ching Siew Mooi <sup>1</sup>, Chia Yook Chin <sup>2</sup>

<sup>1</sup>. MMedFam, Family Medicine Specialist, Department of family Medicine & Health Sciences, Universiti Putra Malaysia

<sup>2</sup>. FRCP, MBBS Senior consultant primary care physician, Department of Primary Care, University Malaya Medical centre, Malaysia

[chingsmlcl2004@yahoo.com](mailto:chingsmlcl2004@yahoo.com)

#### ABSTRACT

This case illustrates the management by a primary care physician of a child with Down syndrome who had recurrent balanitis. Various methods of management were tried. Eventually it was just by practicing proper genitalia hygiene and using the sitz bath, that actually produce success in settling the recurrent balanitis. The use of sitz bath provides an alternative in the management of balanitis will be described here.

#### Bibliographic Information of this article:

[Ching Siew Mooi, Chia Yook Chin. Balanitis in Down syndrome-A case from Malaysia. *Electronic Physician*, 2012;4(1):470-473]. Available online at: <http://www.ephysician.ir/2012/470-473.pdf> . (ISSN: 2008-5842). <http://www.ephysician.ir>

**Keywords:** Balanitis; Down syndrome; Bath; Circumcision; Phimosis; Urinary tract infection

© 2009-2012 *Electronic Physician*

#### 1. Introduction

Balanitis is neither a common cause of recurrent urinary tract infection nor a common illness among Down syndrome (12). It is not an easy job for the primary care doctor to educate a mentally challenged child with Down syndrome to do self care for balanitis. Thus it is important to teach the family members and patient a simple and practical way to solve this problem. As such, the objective of this case report is to help the family physician to identify, explore and provide other alternatives as part of more comprehensive and holistic care for these groups of patients with balanitis.

#### 2. Case Presentation

##### 2.1. History

A ten-year-old Indian boy came to the clinic accompanied by his mother for frequent urinary tract infection and requesting for circumcision. His mother said that he had suffered the third episodes of urinary tract infection associated with red swelling over the penile area for the past few years. There was also occasional encopresis in school or at home. The mother claimed that his condition was similar to some of his friends who had similar problem and that their condition was improved after circumcision. She hoped that her son also could go for a circumcision to avoid another episode of infection. According to his mother, he also had frequent attacks of tonsillitis associated with snoring at night.

##### 2.2. Physical findings

On examination, he was active, moved around the room and appeared to be friendly to everyone. He had most of the features of Down syndrome. On examination of the genitalia, phimosis was noted as the foreskin was tight and difficult to retract. There was dirt under the foreskin as well. However, there was no redness or swelling at the penile area. Ear nose throat (ENT) examination showed bilateral grade 3 enlargement of the tonsils.

##### 2.3. Investigations

His laboratory tests are shown in table 1. His urinalysis and renal profile on the first visit were normal. Urine culture and ultrasound kidney on subsequent visit also showed a normal result.

##### 2.4. Referral

We referred him to paediatric surgeon for circumcision as we postulated the phimosis may have precipitated the frequent urinary tract infections. Unfortunately, the operation was deferred as he was suspected to

have obstructive sleep apnoea. We referred him to the ENT surgeon for tonsillectomy since the enlarged tonsils had contributed to the obstructive sleep apnoea; however mother was not keen for it.

### 2.5. Progress

As it is a difficult task for the child to take care of himself and he did not allow his mother to touch his genitalia, we advised the mother to put him on a sitz bath once a week as an alternative of genitalia hygiene. During the subsequent follow-up over the following 2 years, mother told us that he had no more new episode of balanitis or urinary tract infection since he practiced using the sitz baths.

**Table 1.** Laboratory test findings of the presented case.

	Test	Result	Range/Reference Range
UFEME: Biochemistry	Urine specific gravity	1.025	1.005-1.030
	PH	5.0	5-7
	Albumin	Negative	g/L
	Glucose	Normal	mmol/L
	Ketone	Negative	mmol/L
	Nitrite	Negative	
	Haemoglobin	Negative	/uL
	Leukocyte esterase	Negative	/uL
UFEME: Microscopy	RBC	Negative	(0-1) /uL
	WBC	Negative	(0-3) /uL
	Epithelial cells	Negative	
	Casts	Negative	
	Crystals	Negative	
	Bacteria	Negative	
	Others	Negative	
Renal function test	Sodium	137	(136-145) mmol/L
	Potassium	4.2	(3.6-5.2) mmol/L
	Chloride	100	(100-108) mmol/L
	Urea	4.8	(2.5-6.4) mmol/L
	Creatinine	55	(62-115) $\mu$ mol/L

## 3. Discussions

### 3.1. Why did this patient has recurrent episodes of urinary tract infection?

This patient is prone to have urinary tract infection and it could be due to several reasons:

**1. Dysfunctional voiding:** Dysfunctional voiding is defined as malfunction during the voiding phase of the micturition cycle, in which the child is contracting rather than relaxing the urethral sphincter during voiding phase. Over time, there is high pressure generated in the bladder and cause the child to urinate urgently. This can cause daytime or nighttime wetting, as well as urethral reflux and recurrent non-febrile urinary tract infection.<sup>3</sup> His mother noted that he used to hold his urination and frequently ends up with daytime wetting. This could be due to a delay in his brain control over his bladder function and presented with dysfunctional voiding.

**2. Antibiotics:** Children who receive broad-spectrum antibiotics are at higher risk of getting urinary tract infections because antibiotics can alter the defence mechanism against colonization. This may explain why he had frequent urinary tract infection as he was frequently on antibiotics for the tonsillitis and it is likely have altered the gastrointestinal as well as peri-urethral flora.

**3. Constipation:** Constipation is common among Down syndrome children and studies reported children with daytime wetting and urinary tract infection had a higher rate of encopresis and constipation (3).

However investigations like ultrasound of the abdomen need to be carried out to rule out kidney damage following the vesicoureteral reflux. The patient did have an ultrasound investigation and it was normal. Additional investigation like dimercapto succinic acid scan (DMSA) and micturating cystourethrogram(MCUS) were not warranted in view of the normal ultrasound and that he did not have any severe systemic symptoms (4).Circumcision is definitely warranted in him since there is underlying phimosis with balanitis. Several studies have pointed out that the incidence of urinary tract infection is higher in uncircumcised male (5-8).

### 3.2. What are the other indications for circumcision?

Male circumcision is one of the most common surgical procedures carried out all over the world. It is done for a number of reasons including abnormalities of foreskin and religious purpose (9). There is a lot of controversy and debate regarding its potential benefits and risks. Points against it are the procedure is not natural and it carries a small but significant morbidity and mortality, e.g. it can be associated with meatal stenosis. On the other hand, it can reduce the risk of periurethral bacterial colonization, urinary tract infections, systemic infection like septicaemia, carcinoma of the penis, and sexually transmitted disease. Other indications for circumcision include phimosis, paraphimosis (occasionally), recurrent balanitis, balanitis xerotica obliterans and serious urinary tract anomaly (9). The absolute contraindications for circumcision are hypospadias, epispadias, chordee, buried penis or micropenis (10).

### 3.3. When would patient with phimosis indicated from circumcision?

Phimosis is defined as presence of adhesion between the foreskin (prepuce) and glans penis, which prevents the foreskin from being retractable. The foreskin can be adherent to the glans penis and this is physiological even up to 5 years of age (9). It gradually separates until it becomes non-adherent, usually by the age of 6. Study has reported that a significant number of school-aged boys still had physiologic phimosis that resolved over time (11). True or pathologic phimosis, is present when the foreskin cannot be retracted after it has been previously retractable. In true phimosis, the margin of the foreskin and the glans penis is usually rolled and is palpably thickened due to scarring secondary to underlying inflammatory process. Phimosis can be treated by local corticosteroid cream (e.g. by applying 0.05% betamethasone valerate cream QID on the tight shiny part of the foreskin where inner skin meets the outer skin for 4 weeks duration). Circumcision is indicated if this is a true scarring, failure of foreskin to retract by 7 years old and if it causes balanitis (9).

### 3.4. What is balanitis?

Balanitis refers to inflammation of the glans penis whereas inflammation of the foreskin is called prothitis. Balanoposthitis is an inflammation involving both the glans and the foreskin. The symptoms of balanitis are redness, swelling of the glans, pain or discomfort, discharge under the foreskin, itchiness, unpleasant smell, phimosis or dysuria. Balanitis can be due to both infectious and noninfectious causes. It can be associated with underlying skin disorder like lichen planus, eczema, dermatitis or psoriasis. Phimosis and skin irritation from chemicals can cause balanitis. Candida albicans infection with or without underlying diabetes can cause balanitis as well. Balanitis can be treated with saline bathing, a corticosteroid cream or antibacterial ointment like fucidin cream 4 times a day. It may respond to the above treatment if it is mild, but it usually settles down with circumcision (9).

### 3.5. Learning issues

Circumcision is the most effective way in curing balanitis in a child with phimosis. However, the circumcision was cancelled due to the underlying suspected obstructive sleep apnoea. We told his mother to let him have weekly saline sitz bath since he did not allow his mother to clean his genitalia. Since he practices the sitz bath method, he had no more attacks of balanitis for two years compared to his previous history of one attack over few months time. At the same time, we had advised the mother to encourage her son to pass urine frequently during the day time and to inform his teacher to remind him to go to toilet every now and then. She needs to make sure her son empties his bladder before going to school. In the end, she was happy because the teacher in school also told her that her son had less wetting of his pants for the following few months.

## 4. Conclusion

As primary care physicians who are always being the front-liner of the healthcare system, we will definitely encounter similar patients in the clinic. Prescribing sitz bath add to a comprehensive and holistic care for those groups of patients with balanitis. Future research in the role of sitz bath in managing balanitis is recommended.

### Acknowledgements:

The author(s) would like to thank the patient and his mother for their agreement to this case write-up and thank you to the Department of Primary Care, University of Malaya for giving access to patient's case records.

### Corresponding Author:

Dr. Ching Siew Mooi,  
Department of Family Medicine, Faculty of Medicine & Health Sciences,  
Universiti Putra Malaysia (UPM), 43400 Serdang, Selangor D.E., Malaysia.  
Tel: +60.389472656,  
Fax: +60.389472328,  
E-mail: [chingsmlcl2004@yahoo.com](mailto:chingsmlcl2004@yahoo.com)

**References**

1. Hayes C. Down syndrome: caring holistically in primary health care. *British Journal of Community Nursing*. 2007;12(9):404-410.
2. Lee JBL, Neild GH. Urinary tract infection. *Medicine*. 2007;35(8):423-428.
3. C. Kodman Jones, L. Hawkins, S.L. Schulman. Behavioural characteristics of children with daytime wetting. *The Journal of Urology*. 2001;166(6):2392-2395.
4. Hussain Imam Hj Muhammad Ismail, Ng Hoong Phak, Terrence Thomas. *Paediatric Protocols for Malaysian Hospitals: Kementerian Kesihatan Malaysia*, 2005.
5. Zorc JJ, Levine DA, Platt SL et al. Clinical and demographic factors associated with urinary tract infection in young febrile infants. *Paediatrics*. 2005;116(3):644-8.
6. Teresa T, Mohammad A, Paul T et al. Cohort study on circumcision of newborn boys and subsequent risk of urinary-tract infection. *Lancet*. 1998;352(9143):1813-16.
7. Craig JC, Knight JF, Sureshkumar P, Mantz E, Roy LP. Effect of circumcision on incidence of urinary tract infection in preschool boys. *The Journal of pediatrics*. 1996;128(1):23-27.
8. Singh-Grewal D, Maedessi J, J C. Circumcision for the prevention of urinary tract infection in boys: A systematic review of randomised trials and observational studies. *Archives of Disease in Childhood*. 2005;90(8):853-8.
9. John Murtagh. *General Practice*. Fourth Edition, 1091-4: McGraw-Hill Australia Pty Ltd, 2007.
10. Hassan Hirji, Rodger Charlton, Siddharth Sarmah. Male circumcision: a review of the evidence. *Journal of men's health*. 2005;2(1):21-30.
11. Oster J. Further fate of the foreskin. Incidence of preputial adhesions, phimosis, and smegma among Danish schoolboys. *Archives of disease in childhood*. 1968;43(228):200-3.