

## Fact Sheet on Balanitis Xerotica Obliterans (BXO)

### Introduction

Balanitis xerotica obliterans (BXO), also known as lichen sclerosus of the penis is a dermatological (skin) condition affecting the male genitalia. The cause of BXO is unclear. It was first described by Stuhmer in 1928. BXO commonly occurs on the foreskin and glans penis. Atrophic white patches appear on the affected area, and commonly, a whitish ring of indurated (hardened) tissue usually forms near the tip that may prevent retraction of the foreskin. (Medscape; Wikipedia).



[Picture Credit: Balanitis Xerotica Obliterans]

Yardley, *et al* (2007) believe that the prevalence of BXO is greater than previous series have shown and that it may manifest in children at an earlier age than previous series have shown. This belief is based on a study of 422 boys at a median age of 6 years 2 months (range, 3 mo to 16 y), of whom 186 (44.1%) received treatment involving surgery (148 circumcision, 33 preputial adhesiolysis, 5 frenuloplasty). Of the 186 boys, 110 had histological tissue examination; 84.8% of skin samples were pathologic. Specifically, tissue showed chronic inflammation (n = 69; 46.6%), BXO (n = 51; 34.5%), and fibrosis (n = 4; 2.7%).

### Incidence of Balanitis Xerotica Obliterans (BXO) in South Africa

The National Cancer Registry (2013) does not provide information regarding the incidence of Balanitis Xerotica Obliterans (BXO) because it is not a cancerous condition itself, however, if neglected it may develop into cancer of the penis.

According to the National Cancer Registry (2013) the following number of penile cancer cases was histologically diagnosed in South Africa during 2013:

Group 2013	Number of Cases	Lifetime Risk	Percentage of All Cancers
All Males	168	1:1 136	0,46%
Asian males	6	1:711	0,72%
Black males	118	1:1 269	1,10%
Coloured males	8	1:1 444	0,19%
White males	34	1:946	0,17%

The frequency of histologically diagnosed cases of penile cancer in South Africa for 2013 was as follows (National Cancer Registry, 2013):

Group 2013	0 – 19 Years	20 – 29 Years	30 – 39 Years	40 – 49 Years	50 – 59 Years	60 – 69 Years	70 – 79 Years	80+ Years
All males	0	1	27	46	34	29	18	5
Asian males	0	0	0	1	0	3	2	0
Black males	0	1	25	38	27	14	7	0
Coloured males	0	0	0	2	0	2	4	0
White males	0	0	2	5	7	10	5	5

### Signs and Symptoms of Balanitis Xerotica Obliterans (BXO)

Early in its course, balanitis xerotica obliterans [BXO] is relatively asymptomatic with only mild visually observable changes of the penis and glans. Physical changes occur over months or years and may include colour or textural changes. Early symptoms are more prevalent in uncircumcised patients.

Symptoms occurring with time and progression of BXO are as follows:

- Pruritus
- Burning
- Hypoesthesia of the glans penis
- Dysuria
- Painful erection with altered sexual function
- Decrease in urinary force or stream calibre
- Urethritis with or without discharge

Symptoms occurring in late BXO (in uncircumcised patients) are as follows:

- Phimosis (inability to retract the foreskin over the glans)
- Paraphimosis (inability to return an already retracted foreskin back over the glans)

The development of multifocal squamous cell carcinoma (SCC) in persons with BXO of the penis and hepatitis C virus infection has been reported. SCC of the penis arising from BXO alone has also been noted.

(eMedicine).

### Causes of Balanitis Xerotica Obliterans (BXO)

The cause of this condition is not known but there is an association with other auto-immune conditions such as vitiligo and certain forms of thyroid disease. It is extremely important to emphasise that the condition is not transmissible through sexual intercourse and is not infectious – neither can it be acquired through sexual intercourse.

The condition is chronic and progressive and can lead to permanent changes in the glans penis and foreskin which can give rise to stricture formation or narrowing of the urethra. These skin changes are characterised by the formation of a hard white lump around the opening of the urethra. A reddened area then forms around the lump and a chronic process of inflammation and scarring ensues which can sometimes lead to ulcer formation. The affected area can become itchy and sore.  
(Irishhealth.com).

### **Complications of Balanitis Xerotica Obliterans (BXO)**

Balanitis xerotica obliterans (BXO) is described as an atrophic and sclerotic condition of the glans penis, which can result in stenosis and the obliteration of the external meatal orifice. Studies have shown that a significant number of patients with penile malignancy have a histologic diagnosis of BXO. Males with BXO and those in whom BXO persists despite circumcision should undergo biopsy and further evaluation.  
(thebmj; Medscape)

### **Medical Treatment of Balanitis Xerotica Obliterans (BXO)**

No consistently effective treatment has been developed for balanitis xerotica obliterans [BXO], however, the following therapies have varying degrees of reported success.

Topical and intralesional steroids: Topical steroids can offer a reliable option only in the management of mild BXO limited to the prepuce in boys with minimal scar formation. Patients and their families must have realistic expectations with regard to the success of such treatments. Steroid-based creams are ineffective in persons with established scarring. Studies have shown that applying a potent topical steroid improves BXO in the histologically early and intermediate stages of disease and may inhibit further worsening in the late stages. Kiss questioned the utility of topical steroid-based creams for the treatment of clinical BXO. Differences in success rates may relate to an unwillingness to use superpotent corticosteroids.

- Topical steroids and skin stretching: Ghysel et al reported on successful therapy with topical steroid application and skin stretching on prepubertal boys with unretractable foreskin and phimosis
- Tacrolimus: Successful treatment of BXO with topical tacrolimus has been reported
- Etretnate (no longer available): Acitretin is the current equivalent
- Carbon dioxide laser treatment
- An interesting new report notes the successful use of intralesional adalimumab, a medication for psoriasis among other things, for BXO

(Medscape).

### **Surgical Treatment of Balanitis Xerotica Obliterans (BXO)**

Balanitis Xerotica Obliterans (BXO) is a chronic, often progressive disease, which can lead to phimosis and urethral stenosis, affecting both urinary and sexual function. Steroid creams are usually the first-line treatment but have a limited role and surgical intervention is frequently necessary. Conservative surgical procedures (circumcision) are often preferred in

the first instance with the premise that recurrence of disease will require a more definitive reconstruction.

Surgical options are more definitive, and includes circumcision, dilating or surgically correcting meatal stenosis, and various urethroplasty techniques. Carbon dioxide laser has been used as an alternative to incisional surgery to ablate BXO on the glans and for the dilatation of proximal stricture.

(Hartley, *et al.*, 2011; Depasquale, *et al.*).

### **Medical Disclaimer**

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