

Original research article

## **An Analytical Study to Assess the Burden and Patient Characteristics of Balanoposthitis at a Tertiary Level Hospital in Rajasthan.**

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### **Abstract**

**Introduction:** Balanoposthitis is a common condition affecting approximately 3-12% of male genitourinary clinic attendees.<sup>1-4</sup> It is inflammation of the non-keratinized epithelium of the glans penis (i.e. Balanitis) and that of prepuce (i.e. posthitis) together.<sup>5</sup> **Aim:** to find out the burden of balanoposthitis amongst patients attending the Dermatology OPD. **Method:** An observational cross-sectional study conducted over a period of eight months, and all males presenting to out-patient-department of Dermatology and STD clinic with complaints of prepuce and/or glans were included in the study. **Results:** In our study, 1.8% (129) had balanoposthitis. Mean age was 39.35±15.15 years (range 2-72 years). **Conclusion:** Balanoposthitis, despite its frequency, has received scant attention. It is predominantly a disease of uncircumcised man.

**Keywords:** balanoposthitis, balanitis, uncircumcised men, prevalence

### **Introduction**

Balanoposthitis is a common condition affecting approximately 3-12% of male genitourinary clinic attendees.<sup>1-4</sup> It is inflammation of the non-keratinized epithelium of the glans penis (i.e. Balanitis) and that of prepuce (i.e. posthitis) together.<sup>5</sup> Most common symptoms are pain, swelling, discharge and redness of glans and prepuce. It is known that balanitis is commoner amongst uncircumcised men possibly as a result of poor hygiene and aeration or because of irritation by smegma.<sup>6</sup> Underlying medical conditions can also predispose to balanitis and can add to severity of condition. For eg. candidal balanitis may be especially severe in patients with

diabetes mellitus.<sup>7</sup> Inflammation of the glans and prepuce may also provide a route for the acquisition of human immunodeficiency virus (HIV) infection.<sup>8,9</sup>

Even though balanoposthitis is a common condition which is encountered in Dermatology outdoor and STD clinics across the globe but published studies describing the clinic-epidemiological features of balanoposthitis are scarce. Also adequate data about prevalence and etiology of balanoposthitis amongst Indian population is lacking. Therefore we planned this study to find out the burden of balanoposthitis amongst patients attending the Dermatology OPD of tertiary care hospital.

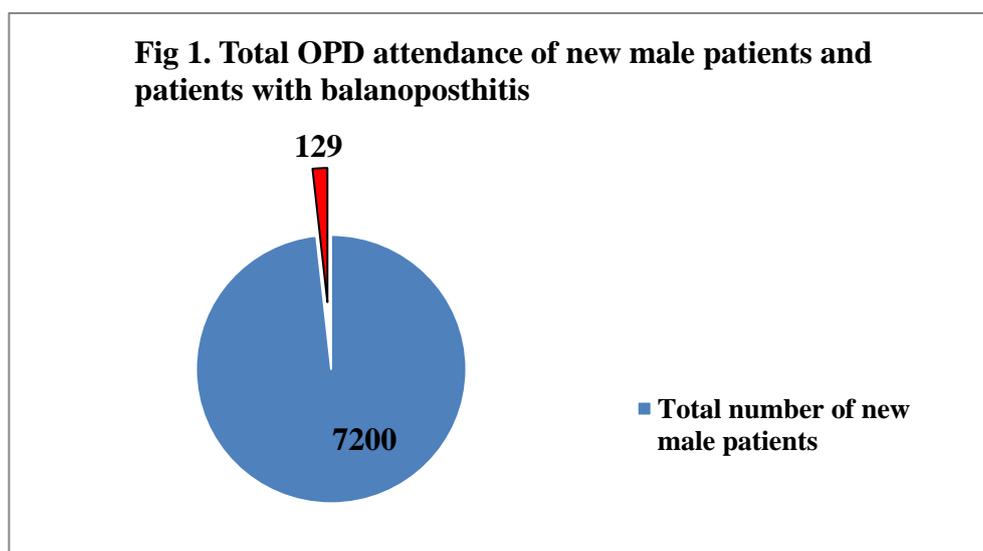
### Methodology:

An observational cross-sectional study was conducted over a period of eight months, and all males presenting to out-patient-department of Dermatology and STD clinic with complaints of prepuce and/or glans were included in the study, after obtaining written informed consent. Study was approved by institutional ethics committee. Apart from demographic details; present, past, personal, travel, drug, sexual contact, proper penile hygiene and transfusion history were elicited and recorded. Presenting episode was labelled as primary, recurrent ( $\geq 2$  episodes), or persistent (lesions which had not completely remitted even once in the last 6 weeks). Thorough general, dermatological and systemic examination was done. Proper penile hygiene was defined as cleaning of glans and prepuce regularly with clean water without using any soap or irritant; retracting the prepuce before urination and cleaning genitals after sexual activity or nocturnal emission. Unsafe sexual exposure was the one without use of any barrier contraceptives.

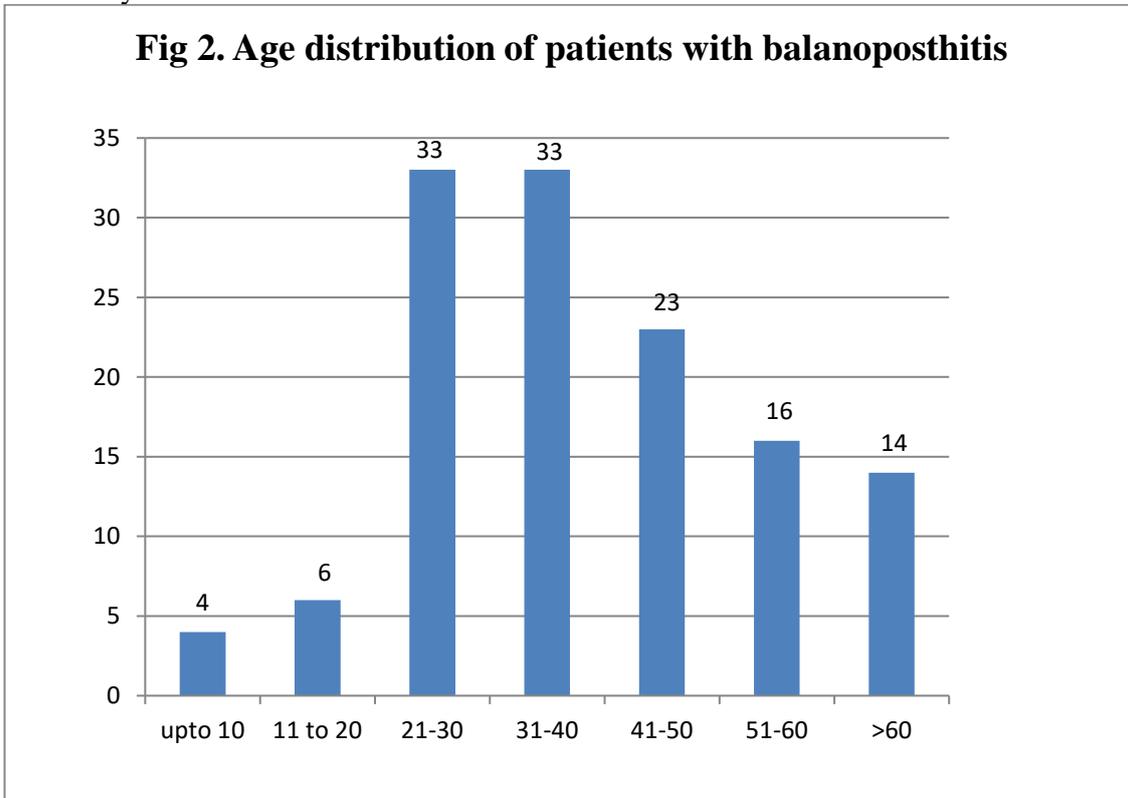
Data was collected and tabulated in MS-excel version 16.0 The continuous data was presented as mean and standard deviation, and discrete data in the form of frequencies and percentages. Test applied for continuous data was student's t-test and chi-square test was applied for discrete data. The test of significance applied for each morphological pattern was chi-square test for  $11 \times 2$  table at degree of freedom=10. P value of  $<0.05$  was considered statistically significant.

### Results:

Total 7200 males attended the dermatology and STD clinic during the study period, out of which 1.8% (129) had balanoposthitis.



Mean age was  $39.35 \pm 15.15$  years (range 2-72 years). Majority of patients belonged to the age group of 21-40 years (51.2%). Youngest patient in our study was a 2 year old boy and the oldest one was 72 year old man.



Most of the patients (87.6%) were married and 30.2% reported unsafe sexual exposure during last 6 months.

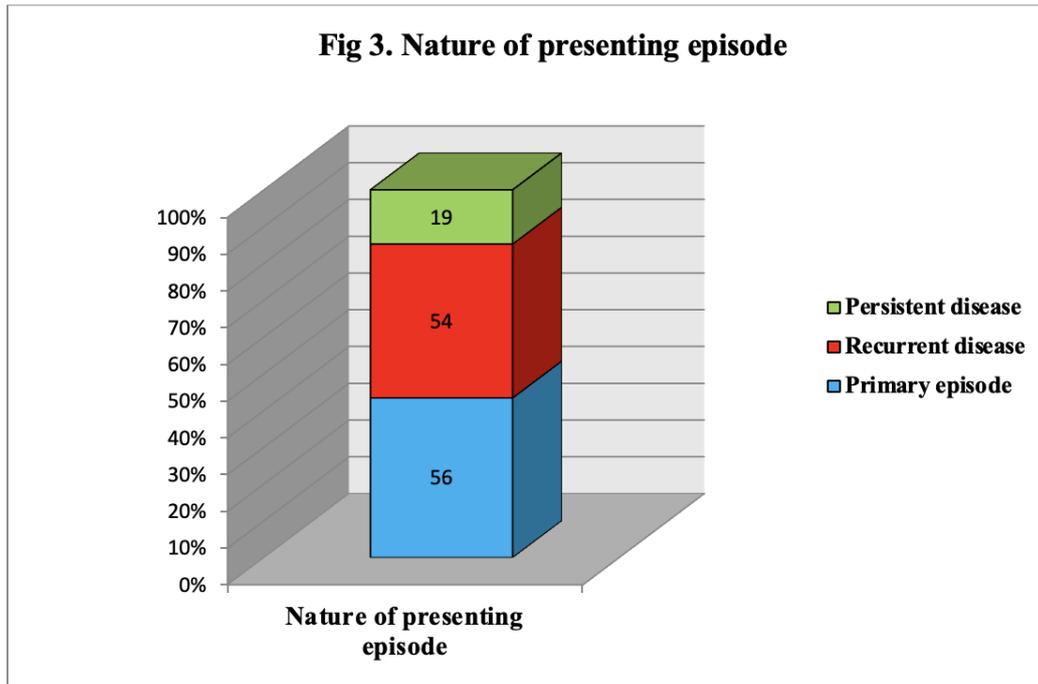
All patients were uncircumcised and heterosexual. More than half (65.1%) patients presented within 2 weeks of symptoms.

Majority of patients [84/129 (65.5%)] of balanoposthitis presented with acute onset (<2 weeks). 56/129 (43.4%) patients presented with first episode of balanoposthitis while 54/129 (42%) had recurrent balanitis. 19/129 (14.7%) of patients had persistent balanitis (>6 weeks).

**Table 1: Duration of balanoposthitis**

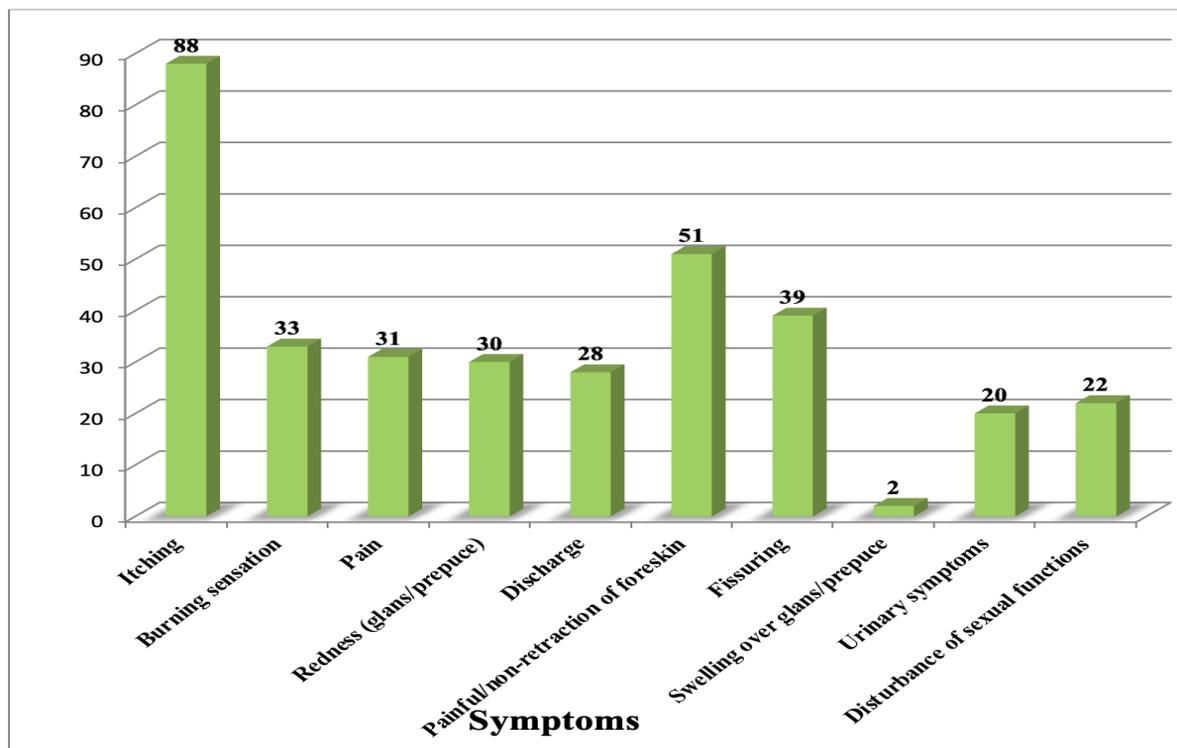
Duration	No. of patients	%
1-7 days	57	44.2
8-15 days	27	20.9
16-30 days	19	14.7
1-6 months	18	14.0
>6 months	8	6.2
<b>Total</b>	129	100

Presenting episode was first episode in 43.4%, recurrent in 41.9% and persistent in 14.7% patients. Out of 54 patients with recurrent balanitis, 26 patients had candidal balanoposthitis.



Proper penile hygiene was practiced by 63.6% patients and all patients of persistent balanoposthitis had improper penile hygiene.

Balanoposthitis is usually symptomatic. In our study, we found 123 (95.3%) patient were symptomatic. 88 (68.2%) patients gave history of itching over glans and prepuce. Burning sensation over glans and prepuce (33; 25.6%), pain (31; 24%), redness over glans and prepuce (30; 23.3%) and discharge (28; 21.7%) were also common symptoms. Painful fissures (39; 30.2%) and difficulty in retraction of prepuce (51; 39.5%) were other frequently reported symptoms.



**Figure 4: symptoms associated with balanoposthitis**

**Discussion:**

In the index study, the prevalence of balanoposthitis was 1.8%. Various studies report that this condition affects 3-12% of patient attending STD clinic.<sup>1-4</sup> Birley et al<sup>1</sup> reported 11% incidence of balanitis in genitourinary medicine clinic attendees. Romero et al<sup>2</sup> found balanoposthitis in 204 (11.8%) out of 1731 participants undergoing outpatient urological evaluation. A long-term Japanese study revealed an incidence of 3-7% per annum.<sup>3</sup> In an Indian study Talamala et al<sup>4</sup> reported balanoposthitis in 10% of patients with non-venereal genital dermatoses.

Maximum no. of patients of balanoposthitis were in the age group 21-40 year which comprised 66/129 (51.2%) cases. This is consistent with other studies.<sup>5</sup> This is expected as this age group belongs to patient with most sexually active age. Balanoposthitis is relatively uncommon in pediatric age group as the risk of exposure to pathogenic infectious organism is minimal. In this study, we also found only 4/129 (3.1%) patients of less than 15 years age who presented with balanoposthitis. Escala et al<sup>10</sup> also reported 4% of boys affecting with balanoposthitis. Most of these cases in pediatric age group were due to poor penile hygiene.<sup>11</sup> 14/129 (10.8%) of our patients of balanoposthitis were of age above 60 years.

In our research, 39 (30.2%) patients with balanoposthitis had history of high risk unsafe sexual exposure in recent past. Raju et al<sup>5</sup> also found 52% of cases of balanoposthitis with history of exposure to STD. Unsafe sexual exposure predisposes the person to balanoposthitis besides increasing risk of other conventional STD's.

All patients of balanoposthitis in our study were uncircumcised. Lisboa et al<sup>12</sup> also found all of their study cases were uncircumcised. In another study of 75 cases of balanoposthitis 69 patient (92%) were found to be uncircumcised (Raju et al).<sup>5</sup> Uncircumcised penis predisposes a person to increased risk of balanitis and other STD's because of larger surface area, thinner epidermal barrier, more opportunity for epithelial microtrauma and warm, moist niche under the prepuce favoring the persistence of fastidious organism.<sup>13</sup> Zoon's balanitis is almost exclusively found in uncircumcised person and majority of patients of genital lichen sclerosus are also uncircumcised.<sup>14</sup> However balanoposthitis is not confined to uncircumcised men only. Birley et al<sup>1</sup> reported 6 circumcised patients in their study of 18 patients with recurrent balanitis.

Conclusion: Balanoposthitis, despite its frequency, has received scant attention. It is predominantly a disease of uncircumcised man. Poor penile hygiene along with unsafe sexual exposure predisposes an individual towards balanoposthitis.

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