



Balanopreputial Adhesion and Paraphimosis due to Lichen Sclerosus

Dongyoung Roh^{1,2}, Hyunju Jin¹, Hyang-Suk You¹, Woo-Haing Shim^{1,2}, Gun-Wook Kim¹, Hoon-Soo Kim¹, Hyun-Chang Ko^{1,2}, Moon-Bum Kim^{1,3}, Byung-Soo Kim^{1,3}

¹Department of Dermatology, Pusan National University School of Medicine, Busan, ²Department of Dermatology, Pusan National University Yangsan Hospital, Yangsan, ³Biomedical Research Institute, Pusan National University Hospital, Busan, Korea

Dear Editor:

Lichen sclerosus (LS) is a chronic, inflammatory, mucocutaneous disorder of the genital and extragenital skin that present with significant sclerosis and atrophy. According to a recent study by Nelson and Peterson¹, the prevalence of male LS was only 0.0014% in a population of 42,648,923 male patients. Male genital LS (MGLS) develops almost exclusively in uncircumcised patients². MGLS can cause itching, pain, and burning sensation of the penis. Furthermore, it can cause urinary or sexual dysfunction³. We report a rare case of circumferential balanopreputial adhesion due to MGLS.

A 21-year-old man presented with a whitish atrophic patch on the glans and prepuce for several years. Six months before visiting Pusan National University Hospital (PNUH), he underwent emergency circumcision because of acute urinary retention and paraphimosis. However, the circumcision had not been fully performed due to adhesion of the glans and foreskin around the whitish atrophic patch. After the operation, his voiding function was conserved until the day of visiting PNUH. However, physical examination showed an unretractable prepuce with complete circumferential balanopreputial adhesion (Fig. 1A, B). Histopathological findings showed cleft like space separating basal layer from pale upper dermis. Hydropic degenerations of the basal cells and lymphocyte infiltrations in the upper dermis were also seen. Mild homogenous collagen bundles in the upper dermis were observed com-

pared to relatively normal deep dermis (Fig. 1C~F). Based on these findings, we diagnosed the lesion as LS. The patient was referred to the urology department for reconstructive surgery, but he refused any further invasive treatment.

In Korea, MGLS is an especially rare dermatosis, and we assume that the extremely high circumcision rate among Koreans might be the leading cause of its rarity. Furthermore, circumferential balanopreputial adhesion due to MGLS has not been reported in Korean literatures (Table 1). Despite the significance of urinary or sexual dysfunction in patients with MGLS, most of the Korean dermatologic reports are not focused on the functional loss in patients with MGLS (Table 1). Our patient had not only a skin lesion but also voiding difficulty due to paraphimosis. Although skin biopsy was not performed at that time, we presumed that the paraphimosis might have been caused by the inner adhesion of glans and prepuce that had been triggered by the long lasted MGLS lesion. Moreover, a complete circumferential balanopreputial adhesion and unretractable prepuce could induce sexual dysfunction and urinary dysfunction in the near future. Chronic exposure to urine has been proposed to play a role in the etiogenesis of MGLS. Especially in uncircumcised males, dribbled urine becomes occluded between the inner prepuce and glans. Occlusion and koebnerization precipitate inflammation, which progresses to sclerosis⁴. The incidence of MGLS in Korea is expected to increase after a few decades, as the circum-

Received March 7, 2017, Revised June 24, 2017, Accepted for publication July 18, 2017

Corresponding author: Byung-Soo Kim, Department of Dermatology, Pusan National University Hospital, 179 Gudeok-ro, Seo-gu, Busan 49241, Korea. Tel: 82-51-240-7338, Fax: 82-51-245-9467, E-mail: dockbs@pusan.ac.kr
ORCID: <https://orcid.org/0000-0003-0054-8570>

This is an Open Access article distributed under the terms of the Creative Commons Attribution Non-Commercial License (<http://creativecommons.org/licenses/by-nc/4.0>) which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

Copyright © The Korean Dermatological Association and The Korean Society for Investigative Dermatology



Fig. 1. (A) The prepuce was un retractable due to circumferential adhesion of the glans and prepuce on the coronal sulcus. (B) Whitish atrophic patches on the glans and prepuce were observed. (C) Infrabasal inflammation with cleft like space separating the basal layer from the pale upper dermis (H&E, $\times 40$). (D) Hydropic degenerations of the basal cells (H&E, $\times 200$). (E) Mild homogenous collagen bundles in the upper dermis (H&E, $\times 200$). (F) Infrabasal inflammatory cells mostly consist of lymphocytes (H&E, $\times 400$).

Table 1. Korean reports of male genital lichen sclerosus

Author	Age (yr)	Site	Functional impairment	Balanopreputial adhesion
Kim et al. (1977)	21	Glans	ND	—
Choi et al. (1982)	24	Glans, prepuce	ND	—
Kim et al. (1990)	59	Glans	Urinary frequency, dysuria	—
Lee et al. (2002)	66	Glans	ND	—
Lee et al. (2008)	30~39	Glans, prepuce	ND	—
Oh et al. (2008)	ND	Prepuce	ND	ND
Oh et al. (2008)	ND	Glans	ND	ND
You et al. (2016)	14	ND	ND	ND
Present case	21	Glans, prepuce	Voiding difficulty	+

ND: not described.

cision rate in Korea is steeply decreasing⁵. Therefore, Korean dermatologists should always be aware that functional impairment could be caused by MGLS, as in our case. Thus, we described a rare and instructive Korean case of MGLS with circumferential balanopreputal adhesion.

CONFLICTS OF INTEREST

The authors have nothing to disclose.

REFERENCES

1. Nelson DM, Peterson AC. Lichen sclerosus: epidemiological distribution in an equal access health care system. *J Urol* 2011;185:522-525.
2. Mallon E, Hawkins D, Dinneen M, Francics N, Fearfield L, Newson R, et al. Circumcision and genital dermatoses. *Arch Dermatol* 2000;136:350-354.
3. Edmonds EV, Hunt S, Hawkins D, Dinneen M, Francis N, Bunker CB. Clinical parameters in male genital lichen sclerosis: a case series of 329 patients. *J Eur Acad Dermatol Venereol* 2012;26:730-737.
4. Bunker CB, Shim TN. Male genital lichen sclerosis. *Indian J Dermatol* 2015;60:111-117.
5. Kim D, Koo SA, Pang MG. Decline in male circumcision in South Korea. *BMC Public Health* 2012;12:1067.

<https://doi.org/10.5021/ad.2018.30.3.386>



Amount of Consumed Medicines as a Severity Index for Chronic Inflammatory Skin Disorders

Eun Jung Byun, Chun Wook Park¹, Sang Hyun Cho

Department of Dermatology, The Catholic University of Korea, Incheon St. Mary's Hospital, Incheon, ¹Department of Dermatology, Kangnam Sacred Heart Hospital, Hallym University College of Medicine, Seoul, Korea

Dear Editor:

In chronic inflammatory skin disorders that show repeated cycles of improvement and aggravation, it is important to understand the severity of the disease. Since chronic diseases require long-term treatment, it is critical to determine the first-line treatment, maintenance treatment, and prevention of recurrence according to disease severity. Atopic dermatitis (AD) and psoriasis are common chronic inflammatory diseases, and there are various tools for the measurement of their severity such as the SCORing Atopic Dermatitis, eczema area and severity index (EASI) or psoriasis area and severity index^{1,2}. These severity indexes are

mostly scored based on clinical findings by doctors or subjective items assessed by the patient. However, the ratings can differ according to the attending doctor or the patient's individual threshold and a somewhat more objective index is required. Management of chronic inflammatory dermatitis, including the type and amount of medication, is determined by the severity of the disease. This study was conducted to determine whether the prescribed amount of oral medications or topical agents could be used as a severity index in AD patients.

A randomized, open, non-comparative clinical study was conducted at the Department of Dermatology, The

Received April 17, 2017, Accepted for publication July 18, 2017

Corresponding author: Sang Hyun Cho, Department of Dermatology, Incheon St. Mary's Hospital, College of Medicine, The Catholic University of Korea, 56 Dongsu-ro, Bupyeong-gu, Incheon 21431, Korea. Tel: 82-32-280-5700, Fax: 82-2-506-9514, E-mail: drchos@yahoo.co.kr
ORCID: <https://orcid.org/0000-0001-8289-1190>

This is an Open Access article distributed under the terms of the Creative Commons Attribution Non-Commercial License (<http://creativecommons.org/licenses/by-nc/4.0>) which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

Copyright © The Korean Dermatological Association and The Korean Society for Investigative Dermatology