

## Occlusion, urine and genital lichen sclerosis

Sir,

I congratulate my friends and colleagues, Drs. Gupta, Malhotra and Ajith on their perspicacious observations concerning the distribution of genital lichen sclerosis (GLSc), recently published in your journal.<sup>[1]</sup> I also applaud the clarity of their interpretation, with which I unequivocally agree, that occlusion of susceptible skin is central to the pathogenesis of this cryptic but important dermatosis. My own view is that it is occlusion specifically with *urine* that is key. May I have your permission, Sir, to paraphrase here from letters from myself that have appeared in the urology literature over the last couple of years about this theory?<sup>[2,3]</sup>

In the male (M), GLSc affects principally the uncircumcised only rarely occurring in those who were circumcised at birth, where it is associated with trauma, instrumentation, genital jewellery (piercing) and gross anatomical abnormalities such as hypospadias and its surgical repair,<sup>[4]</sup> situations that can create urinary leakage. In girls, GLSc can be self-limiting, perhaps because tighter control of continence is acquired with aging (R. U. Sidwell-personal communication). In the adult female GLSc classically causes characteristic perianal disease<sup>[5]</sup> and has been associated with incontinence in women in a single report.<sup>[6]</sup> But GLSc never normally causes perianal disease in men because in striking contradistinction to women the male perineum is never normally chronically exposed to urinary irritation. However, MGLSc occurs and recurs in grafts.<sup>[4,7]</sup>

Arguably, the arrangement of the distal urethra, navicular fossa and meatus has evolved to function as a low-pressure valve. The embryology is complicated and a wide, albeit often subtle, variation in naviculomeatal valve structure and function, and the relationships of both to striking variation in the structure and function of the prepuce, is revealed by meticulous clinical assessment. Many men presenting with GLSc will confess to dribbling after voiding and

have abnormal naviculomeatal morphology on close examination. In these men, urine dribbling from the meatus after the prepuce has been replaced following voiding will spread widely between the juxtaposed mucosal surfaces. Occlusion and the phenomenon of koebnerization create the inflammation.<sup>[8]</sup> Our magnetic resonance spectroscopy work suggests that there is not one single indictable component of urine.<sup>[9]</sup>

Female GLSc seems to spare non-cornified stratified squamous epithelium. Women do not get urethral disease,<sup>[5]</sup> but this can be a devastating complication in men. Perhaps this is because, in the male, susceptibility to the irritant effects of urine may be due to variability in the epithelialization of the mucosa of the distal urethra and navicular fossa, as well as dysfunction of the naviculomeatal valve. The definition of mucosa is controversial but undoubtedly the proximal penile urethra possesses a true mucosa, while the circumcised glans certainly does not, the uncircumcised glans and inner prepuce might not, and the outer prepuce most likely does not. There are transition zones between true urothelium and true skin. Just as there is wide variability in the size and shape of the navicular fossa, there is probably variability in the site of the epithelial transition zones, the degree of keratinization of the glans, the length and, thus, surface area of the foreskin, and the disposition of adnexae. Perhaps urethral LSc eventuates because the transition to stratified keratinizing squamous epithelium occurs and/or urethral mucus glands are lost, too proximally, thus rendering the epithelium focally susceptible to the pernicious irritant effects of urine. Some recent histological findings may be pertinent to this argument.<sup>[10]</sup> Non-genital and especially true mucosal, e.g., buccal, skin grafts are held to be more successful than genital skin grafts in the repair of MGLSc.<sup>[11,12]</sup>

The clinical observations of Gupta and his colleagues help us considerably in better understanding the pathogenesis of GLSc. Enlightenment in this regard is directly relevant to prevention or early diagnosis and medical and surgical treatment of the potentially catastrophic condition that is MGLSc. For example, surgical management of complicated GLSc

must be designed so as not further to compromise naviculomeatal competence.

**Christopher B. Bunker**

Department of Dermatology, University College London Hospitals,  
London, UK

**Address for correspondence:**

Prof. C.B. Bunker, Department of Dermatology, University  
College Hospital, 235 Euston Rd, London, NW1 2BU, UK.  
E-mail: cbbunker@me.com

**REFERENCES**

1. Gupta S, Malhotra AK, Ajith C. Lichen sclerosis: Role of occlusion of the genital skin in the pathogenesis. *Indian J Dermatol Venereol Leprol* 2010;76:56-8.
2. Bunker CB, Edmonds E, Hawkins D, Francis N, Dinneen M. Re: Lichen sclerosis: Review of the literature and current recommendations for management: J. M. Pugliese, A. F. Morey and A. C. Peterson *J Urol* 2007;178:2268-2276. *J Urol* 2009;181:1802-3.
3. Bunker CB. Re: Sanjay Kulkarni, Guido Barbagli, Deepak Kirpekar, *et al.* Lichen sclerosis of the male genitalia and urethra: Surgical options and results in a multicenter international experience with 215 patients. *Eur Urol* 2009;55:945-6. *Eur Urol* 2010;58:e55-6.
4. Bunker CB, Neill SA. The genital, perianal and umbilical regions. In: *Rook's Textbook of Dermatology*. 7<sup>th</sup> ed. Wiley-Blackwell; 2010. p. 71.20-23.
5. Bunker CB, Neill SA. The genital, perianal and umbilical regions. In: *Rook's Textbook of Dermatology*. 7<sup>th</sup> ed. Wiley-Blackwell; 2010. p. 71.62-65.
6. Owen CM, Yell JA. Genital lichen sclerosis associated with incontinence. *J Obstet Gynaecol* 2002;22:209-10.
7. Abdelbaky AM, Aluru P, Keegan P, Greene DR. Development of male genital lichen sclerosis in penile reconstruction skin grafts after cancer surgery: An unreported complication. *BJU Int* 2011. [In press]
8. Weigand DA. Microscopic features of lichen sclerosis et atrophicus in acrochordons: A clue to the cause of lichen sclerosis et atrophicus? *J Am Acad Dermatol* 1993;28:751.
9. Edmonds EV, Bunker CB. Nuclear magnetic resonance spectroscopy of urine in male genital lichen sclerosis. *Br J Dermatol* 2010;163:1355-6.
10. Kulkarni S, Barbagli G, Kirpekar D, Mirri F, Lazzeri M. Lichen sclerosis of the male genitalia and urethra: Surgical options and results in a multicenter international experience with 215 patients. *Eur Urol* 2009;55:945-56.
11. Venn SN, Mundy AR. Urethroplasty for balanitis xerotica obliterans. *Br J Urol* 1998;81:735-7.
12. Bracka A. Re: Urethroplasty with abdominal skin grafts for long segment urethral strictures. *J Urol* 2010;183:1880-4. *J Urol* 2011;185:1985-6.

Access this article online	
<b>Quick Response Code:</b>	<b>Website:</b> www.ijdvl.com
	<b>DOI:</b> 10.4103/0378-6323.95461