Balanoposthitis associated with the presence of subpreputial “smegma stones”

A 24 year old kitchen porter presented to our department with a 1 week history of penile irritation and discharge. He had had sexual intercourse on only one occasion, 5 weeks before the onset of symptoms, and had experienced some pain during and for a short time after coitus. Examination revealed an inflamed, only partially retractable prepuce with a purulent subpreputial discharge. Adequate urethral swabs were unobtainable; however, a subpreputial swab for bacterial culture was performed and subsequently grew Proteus spp, Pseudomonas spp, coliform bacilli, anaerobes, and non-candida yeasts. Urine dipstick testing proved negative for sugar. He was prescribed fluconazole 150 mg immediately and metronidazole 200 mg three times daily for 1 week and advised to irrigate gently with normal saline under the prepuce. On follow up at 1 week there had been a marked improvement. The prepuce was now fully retractable, albeit with some difficulty. Urethral swabs were obtained for microscopy, chlamydia ELISA testing, and Neisseria gonorrhoeae culture all of which proved negative. On examination there was still evidence of erythema affecting the glans and prepuce but no obvious discharge. In addition, there was a large accumulation of smegma and three small “smegma stones” (fig). On further questioning he stated that he had never previously attempted to retract his foreskin and had therefore never washed the area. Continued bathing with normal saline was recommended and although a follow up appointment was arranged he failed to reattend.

Chemical analysis of the subpreputial stones showed the presence of both calcium phosphate and magnesium phosphate. Balanoposthitis is a common condition which has been reported to affect up to 11% of male genitourinary medicine clinic attenders. The condition is more common in uncircumcised men, possibly as a result of poor hygiene and an irritant effect of smegma. As this patient had never previously washed beneath the foreskin, the accumulation of smegma had possibly caused a chronic low grade inflammation and thereby contributed to the onset of his balanitis. The acute discomfort experienced during intercourse was probably the result of forcible retraction of the prepuce with thrusting and one would suspect that the presence of “stones” in the subpreputial space contributed to his discomfort. Smegma is the result of desquamated epithelial debris collecting in the subpreputial space and is not the product of glandular secretion. Although the formation of stones has been mentioned briefly in medical texts, to our knowledge, there are no previous case reports in the literature of patients presenting with “smegma stones” and no mention of their chemical composition. Smegma contains a variety of fatty acids, which, as with localised calcification elsewhere in body associated with chronic inflammation, may form calcium soaps thereby producing a nidus for stone formation. This case serves to highlight the importance of subpreputial hygiene, although the complications arising in the patient described must be considered somewhat unusual.

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