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A case of lichen planus of penile mimicking leukoplakia lesions. A review of differential diagnosis

Dermatoses of the male genitalia can be confusing to identify and difficult to diagnose and treat (7). Among penile disorders such diseases as erythema fixum, allergic contact dermatitis, irritant contact dermatitis, infections, malignant epithelial tumors, trauma, psoriasis, psoriasis-like diseases, systemic diseases, syphilitic and gonorrheal balanitis are observed occasionally (11). Lichen planus is a papulosquamous eruption of unknown cause that at times can involve only the glans penis (2). The classical forms of lichen planus affect the shaft or glans presented as multiple papules or single annular lesions (16). Leukoplakia is manifested as whitish plaques, thick white lesions (18) or white patch which are present on the glans and prepuce (4). Another frequent lesions are condylomata accuminata – warts which are caused by human papilloma viruses (HPV) localized on the genital area. HPVs are transferred between humans, from animals to humans, and most presumably from humans to animals (4). Condylomata acuminata are caused by the following types of HPV viruses: 6,11,42,44,51,54,55,69 (4). Some authors report that from 12 to 23 various types of HPV may be involved in the infection of genital and anus region (14,17).

It is supposed that these group of viruses can be divided into three groups, the first one consisting of the viruses potentially inducing the benign lesion of low oncogenity (type 6 and 11). The second group includes the viruses of medium degree of oncogenic risk (types 33,35,39,40,43, 51-56 i 58). The third group consists of oncogenic viruses (type 16 and 18) (14). In men the majority of the lesions are localized in the coronal sulcus, they are also found in the urethral meatus. Chuang et al. (14) reported the localization of condylomata acuminata in the urethral orifice in 10% of their cases.

Secondary balanitis is also often seen as a complication (4). Those lesions are often found in men in the areas susceptible to trauma of epithelium during sexual intercourse (12). Penile verrucae are often smooth and they have a dome-shape. Verrucae papillatae are usually 3–5 mm in diameter and are often grouped together in 3 or 4 (3). Penile lichen sclerosus is characterized by the occurrence of single or multiple erythematosus papulas and maculas which, along with the development of the disease, harden or disappear, and change their colour into porcelain white (11).

Lichen sclerosus commonly involves the glans penis, prepuce, additionaly frenulum, external urethral orifice and navicular fossa of the urethra (4,11,13). The white annulus with enhanced constitution localized in the foreskin region is characteristic. Fung et al. (6) emphasized that lichen sclerosus (LS) and lichen planus (LP) are two conditions frequently

affecting genital skin whose clinical and histologic distinction can be difficult. Both diseases can feature solitary genital lesions (6). Farrell et al. (5) reported nine patients in whom genital lichen sclerosus coexisted with scleroderma spectrum disorders including seven with morphoea, one with morphoea and lichen planus, and one with systemic sclerosis. Psoriasis of the penis may be difficult to distinguish in the uncircumcised men from erythroplasia or plasma-cell balanitis. But confirmatory lesions elsewhere or nail pitting are usually present (16). Herpes progenitalis affects the glans and prepuce, occasionally the scrotum. It is often preceded by burning and pruritus (16).

CASE REPORT

A 50-year-old man with lesion of the penile maculas. Some of them were leucoplakia-like localized in the urethral orificial and a few beneath the orificial 2–3 mm in diameter with a confluence tendency. Another lesion was solitary melanocytic brown macula (Fig.1). The patient did not report any complaints in penile function. The white maculas are locally somewhat depressed, they are difficult to characterize, some of them are similar to leukoplakia, lichen sclerosus atrophicus or cicatrix.

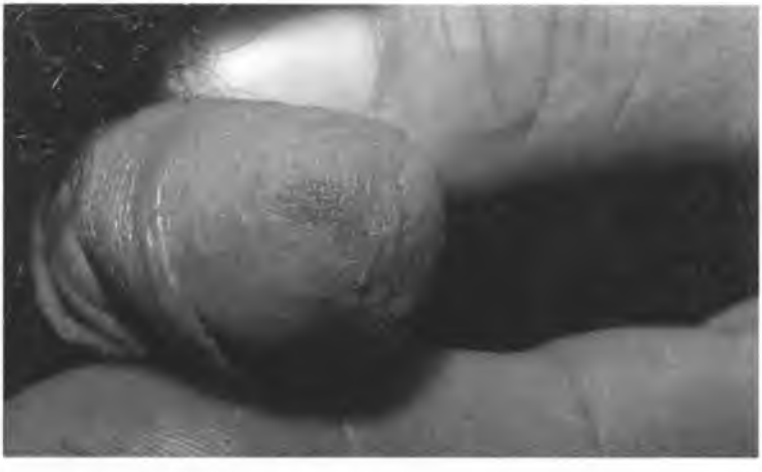

Fig. 1. Penile lichen planus (before treatment)

The anal region was free from the any lesion. The mycotic examination was negative. Nine years ago he started treatment in our department with single asymptomatic penile papula slighty elevated 5x4 mm in diameter smooth and glittering with no other lesions in any region. The patient did not take any oral treatment in connection with this penile lesions. Two months later there were scattered few vesiculas with no complaint. Mycological examination revealed the presence of *Candida albicans*. The patient was treated with antimycotic and antiphlogistic creams. All the lesions disappeared for 9 years. Because of unclear urography, cystoscopy was

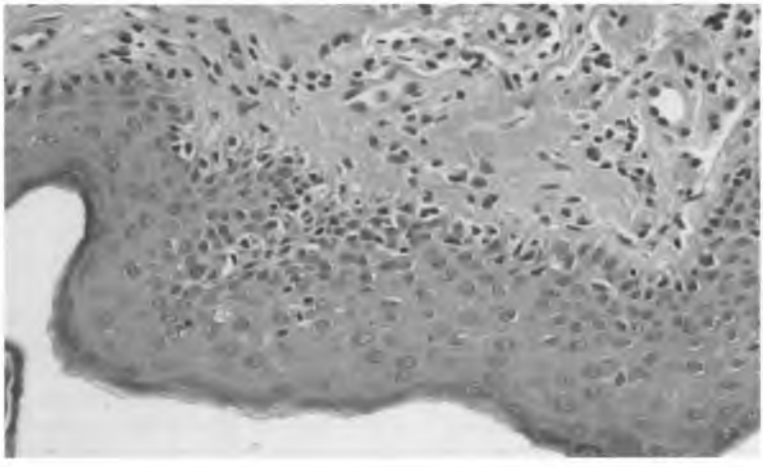

Fig. 2. A skin biopsy from the lesion

Fig. 3. The same region after treatment

performed. The intravenous pyelogram demonstrated normal right kidney and post-inflammatory changes in the left kidney. On endoscopy (cystourethroscopy) urethral meatus, urethral and bladder mucosa were normal. Only hyperaemia of posterial urethra was observed. At the same time biopsy of the penis was performed on the patient having an transurethral examination of the bladder performed by urologist.

Histopathologic examination of skin biopsy taken in 2002 revealed lichen planus (Fig. 2). Medical treatment has its limitations (15). There were no signs of mucosal involvement in our patient as well as no nail lesions. He had no previous erosions on the glans penis, and any flat-topped violaceous papules or another lesions on the whole skin. There was no previous genital herpes simplex virus type 2 infection or any symptoms of postinflammation from irritation or mild trauma affecting that part of the body. Lymphadenopathy was absent. No impairment of

sexual functions was found in the treated patient nor any dysuria. PSA blood level was normal (0,873ng/ml). The routine blood parameters were normal. Following the biopsy, Retin A applied everyday or every second day, cryotherapy of the glans penis excluding external urethral orifice with ethyl chloride (twice) were administred .

After obtaining a histopathological specimen, Isotrexin was administered locally once a day, Piascledin every second day, and an antihistaminic medication was applied. Retinoids were used for a limited time in order to avoid stinging; the patient was instructed to wash down ointment or gel if stinging sensation appeared. When the clinical condition improved considerably: the size of the lesion was reduced and it grew pale (Fig. 3), and a neoplasm was excluded, the patient ceased to attend the outpatient clinic.

DISCUSSION

A variety of urethral disorders may also secondarily involve the penile skin (4). We considered the origin of the above described lesions in the presented patient. The symptoms were similar to those of lichen sclerosus, although the anus region was not involved and there were no lesions in other regions of the body. In the initial stage of the disease, lichen sclerosus does not cause any complaints. Phimosis, ichting, burning sensation, glans hypasthesia, painfull penile erection, dysuria and urethritis can frequently follow lichen sclerosus. External orfice urethral stenosis can occur as part of the sclerotic process and can produce bladder outlet obstruction (4,11,13). Urethral stenosis is observed in approximately 25 per cent of patients and can be the sole symptom (13).

Our patient did not have any urologic symptoms, either. We excluded the presence of candida albicans invasion and another disease localized at these specific area. We considered structure after condylomata acuminata and for that reason endoscopy examination was performed to exclude condyloma involvement of urethra and bladder. The incubation time of condylomata accuminata is highly variable ranging from weeks to years (4), but the patient emphasized that he had only a single partner. his wife without any complaints and with the absence of lesions on her genital area. Since the disease representation was unclear, the urologist consulted the patient and biopsy out of the lesions was performed. The presence of leukoplakia was also considered.

Differential diagnosis of leukoplakia includes carcinoma *in situ*, lichen sclerosus et atrophicus, candidosis, keratotic variant of Bowen disease, verrucae, lichen planus, rarely psoriasis, discoid lupus erythematosus, vitiligo or speckled leukoplakia (carcinoma *in situ*). We considered the diagnosis of lichen rubber, however there were no characteristic changes on the skin and oral mucosa, besides, the lesions were flat and rather atrophic than hypertrophic.

In the majority of the penile cases we can observe subsequently white papules and striae, occasionally forming a lace like pattern, appeared on the penis and prepuce (1) – (Fig.4). Less often annular lichen planus is on the glans penis (2). Lichen planus is a common disease, with a low malignant potential (10). We were aware that there are are several case reports in the literature of squamous cell carcinoma (SCC) developing in cutaneous lichen planus (10). However, SCC developing in penile lichen planus is extremely rare (10,11), thus we decided to apply therapy with retinoids used externally, and subsequently the combination of retinoids and antibiotics with very good result. Barnette et al. (2) evaluated two middle-aged men with annular lichen planus on the glans penis who presented for evaluation of possible infectious/venereal disease. In our case there was not such possibility, the patient had a rare sexual contact only with his wife, once a month or two months and denied any sexually transmissible diseases.

Fig. 4. Typical penile lichen planus

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SUMMARY

We describe a case of a 50-year-old man with lesions localized in the region of urethral meatus and on the epithelium of the foreskin. The lesions were observed as the white spots with flat or somewhat depressed surface, locally similar to leukoplakia, lichen sclerosus atrophicus or cicatrix, without any subjective symptoms. Cystoscopy, micturition urography and biopsy were performed by urologist. The diagnosis of lichen planus Wilsoni was made based on the biopsy examination. We obtained great improvement of lesions through the applied local therapy

Przypadek liszaja płaskiego prącia imitującego leukopłakię – przegląd diagnostyki różnicowej

Przedstawiamy przypadek 50-letniego mężczyzny ze zmianami zlokalizowanymi w okolicy ujścia zewnętrznego cewki moczowej oraz na nabłonku napletka o charakterze białych plam o płaskiej lub nieco wgłębionej powierzchni, miejscami podobnych do leukoplakii, liszaja twardzinowego zanikowego lub blizny, bez dolegliwości subiektywnych. Wykonano badania urologiczne: cystoskopię, urografię mikcyjną i pobrano wycinek ze zmian na napletku. Na podstawie biopsji rozpoznano liszaj płaski Wilsona. W wyniku zastosowanego leczenia miejscowego uzyskano znaczną poprawę stanu.