

GONORRHOEA OF A CONGENITAL DUCT IN THE RAPHE PENIS

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Reports of gonorrhoea of congenital ducts in the penoscrotal raphe are relatively rare. Up to 1943 Lamb (2) collected 33 cases from the literature and discussed a personally observed case, including a review of the embryonal origin of these ducts. Bernfeld (1) found 63 similar reports up to 1961 and added a case observed. To qualify for inclusion in the present study a subcutaneous cord or duct in the raphe must have been mentioned or evidenced by an illustration. Cases in which the duct communicated with the urethra have been excluded. In 33 further cases the gonococcal infection was situated near the raphe or frenulum and in 8 patients gonorrhoeal ulcers were localized in the raphe. In only 3 instances was the scrotal raphe exclusively involved and in 5 the infection extended into it.

In 46 of 64 published cases up to 1961 the urethra was free from gonococcal infection and was situated only in the duct. From 1961 we have not found any further report of this kind in the literature.

In April 1967 a 24-year-old male unmarried patient attended the out-patient department of the dermato-venereological clinic in Hradec Králové complaining of pain in the posterior side of the penis where a tender cord was palpable. The pain lasted four days, the patient had suspect sexual intercourse 9 days before. He had no difficulties on micturition or urethral discharge. He had never had such difficulties up to that time and disclaimed a previous venereal disease.

On examination no urethral discharge

was found. The urethral meatus had a whitish-pink mucous membrane. A band-like cord from 5 to 6 mm. wide stretched from the distal pole of the prepuce to the penoscrotal sulcus along the entire raphe with occasional turnings. From approximately the middle of the penis this cord was less perceptible; nevertheless it could be followed up to the scrotal raphe where it ended abruptly (Fig. 1). The skin over the cord was red, the cord was tender on mild pressure. There was a clubbed dilatation in the skin of the prepuce with a depression filled with dried pus to about 2 cm. from the distal pole of the prepuce. A drop of creamy pus flowed from the groove on mild pressure. Gonococci were found microscopically in the pus and on culturing. A purulent urethral discharge containing gonococci microscopically and on culturing appeared after 2 days. A female contact indicated to be the source of infection was examined, and gonorrhoea was diagnosed.

The patient was treated with usual doses of penicillin; the finding after treatment was repeatedly negative in specimens from the urethra as well as from the duct.

The bandlike infiltration in the raphe penis disappeared after treatment. The skin remained slightly hyperpigmented and it had a violet tinge at the site of the orifice of the duct. The opening got sticky and it was impossible to insert a probe into the duct. The later showed a slightly hardened 3 mm. high band in the penile raphe.

A total excision of the duct was recommended to the patient after 6 months, since



Fig. 1. Longitudinal swelling in the raphe penis of a 24-year-old patient.

the presence of the duct might lead to further infections—as known from the literature. Under local anesthesia the entire duct was excised into the healthy tissue. Z-suture of the skin edges followed. After the opening of the duct no communication was found with the urethra by means of a probe. The duct ended blindly in the skin near the penoscrotal sulcus. The wound healed without complications. A smooth hardly perceptible scar has remained in the penile raphe.

Histology

The excision is lined with squamous cell epithelium. Longitudinal sections of the duct are seen in the stroma. These sections are lined partly with a squamous cell epithelium partly with a transitional one with

a layer of columnar cells on the surface, the plasma of which stains distinctly for acid mucopolysaccharids. Here and there the epithelial lining is pervaded with numerous leucocytes which can be found also in the lumen of the duct. There is sporadically such a marked conglomeration of leucocytes that cavities filled with them are found in the most inward epithelial zones.

The subepithelial parts are infiltrated with lymphocytes and plasma cells. The presence of leucocytes like in the lumen of the duct as found in the superficial part of the epithelium is probably connected with the previous purulent inflammation.

Discussion

This patient first had gonorrhoea of the duct in the penile raphe, the urethral in-

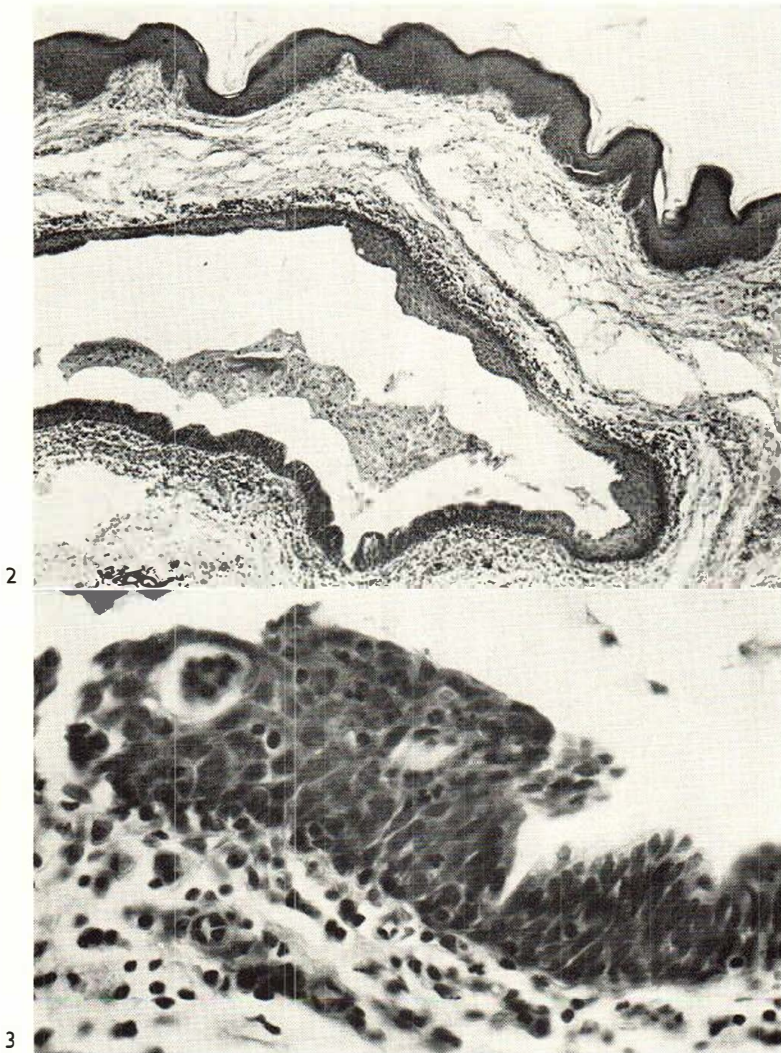


Fig. 2. A part of the duct lined partly with squamous partly with transitional epithelium. The subepithelial tissue of the duct is pervaded with an inflammatory infiltrate. H.E. $\times 120$.

Fig. 3. The epithelial lining of the duct contains numerous leucocytes. Cavities. H.E. $\times 350$.

fection appeared later. It cannot be determined whether both sites were infected concurrently or if only the mucous membrane of the duct was first infected and the mucous membrane of the urethra subsequently. In view of only two days difference in the appearance of the discharge it is probable that both sites were infected concurrently. It is of interest that in the literature exclusive gonorrhoeal infection of the duct is more than three times more frequent than concurrent gonorrhoea of both the duct and the urethra. The duct

was tender in the case under discussion contrary to most published cases where the infected ducts were not tender and the patients quite unaware of the infection and where auto-reinfection took place quite frequently.

Formation of the duct is explained as a defect in the embryonic development. Most embryologists suppose that the epithelial lining of the phallic projection in the urethral groove is a prolongation of the epithelial lining of the urogenital sinus. According to this explanation the mucous

membrane of the urethra would be of an endodermal origin except the front part of it. This portion originates from an epithelial inclusion growing into the primitive glans. It breaks later and forms the balanic part and adjoins the posterior portion of the urethra. It may happen that a part of the epithelial inclusion remains separated so that a duct develops from it (or cysts without an opening). It is lined with the same epithelium from which they originated (squamous stratified epithelium from the level of the skin surface and a transitional epithelium if it is of endodermal origin).

In most reported and histologically followed cases the duct had a stratified squamous lining. In a few cases both types of epithelium are encountered, according to Jadassohn, Miller and Neff (see 1).

The congenital duct in the penile raphe is comparatively rare. Paschkoff (see 1) examined several hundred post mortem specimens and found only 12 accessory ducts in the penis. Ottow (see 1) examined 500 newborn male infants and found only

3 small cysts with an epidermal lining in the region of fraenum.

The persistent tract can be infected with gonorrhoea or with an other infection and may become a lasting source of trouble for the patient. An excision in toto is therefore considered to be the best therapeutic measure by Rupel (see 2).

SUMMARY

The authors describe a case of gonorrhoea in a congenital duct of the penile raphe and in urethra of a 24-year-old male patient. Six months following penicillin treatment the duct was excised in toto and examined histologically. Similar cases from the literature are reviewed.

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