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Idiopathic Calcinosis Cutis of the Scrotum and Penis

Wapnienie idiopatyczne skóry moszny i prącia

Calcinosis is defined as the deposition of insoluble compounds of calcium in tissue due to local or systemic factors, or both of them. Isolated idiopathic calcinosis cutis is a very rare disease. In the histopathological laboratory of the Department of Pathomorphology of the Medical Academy in Lublin we had an opportunity to recognize 2 cases of isolated idiopathic calcinosis cutis of the genital area (penis and scrotum).

Case 1 (histopath. examin. no. 629954): the subject — age 16. Nodules appeared on the skin of the penis and, over the period of several months, developed to the size of hazels (1.5 cm). The nodules did not cause any clinical trouble and were wholly removed surgically. No similar changes were clinically observed on other parts of the body. Clinical diagnosis was *atheroma cutis* and the removed nodules were sent to be examined histopathologically. Macroscopic examination revealed hard nodules which were whitish and brittle at crosssection. A histopathological examination showed extensive deposits of calcium with a slight inflammatory reaction and resorptive development of granulation tissue around these deposits. The diagnosis was formulated as *calcinosis idiopathica localisata cutis penis*. The postoperative course was without complications or recurrence (Fig. 1).

Case 2 (histopath. examin. no. 765751): the subject, aged 26, noticed the first appearance of small hard nodules in the skin of the scrotum during early adulthood. They were single and did not give any clinical symptoms. In time their number increased; new nodules appeared while the former still existed. The disease process spread all over the scrotum. The remaining skin areas did not reveal similar changes. Laboratory examination did not show any increase in the level of calcium and phosphorus. Samples of the changed skin of the scrotum were collected and examined histopathologically. This examination showed, as in case 1, extensive larger and smaller deposits of calcium accompanied by slightly marked inflammatory reaction and resorptive development of granulation tissue as well as fibrosis around these deposits. The diagnosis was: *calcinosis idiopathica localisata multifocalis scroti* (Figs. 2 and 3).

DISCUSSION

Skin calcinosis is the result of precipitation of insoluble calcium compounds in the skin or the subcutaneous tissue (1). There are four types of skin calcinosis: metastatic cutaneous calcinosis, idiopathic, dystrophic and subepidermal calcified nodules (5).

In metastatic calcinosis (*calcinosis metastatica*) the deposits of calcium are observed in the inner organs like the lungs, the kidneys and the stomach but far more seldomly in the skin, the subcutaneous tissues and the muscles. The level of calcium and (or) phosphorus, and of alkaline phosphatase, is increased. Metastatic calcinosis most often accompanies hyperparathyroidism (primary and secondary), the increased level of vitamin D₃, chronic renal failure and numerous neoplastic metastases to the bones. Dystrophic calcinosis (*calcinosis dystrophica*) is found in patients with normal serum levels of calcium and phosphorus and it affects those tissues and organs which have been damaged earlier by mechanical, chemical, bacterial, and other factors.

We speak of idiopathic calcinosis (*calcinosis idiopathica*) when no underlying disease is detectable (5, 6). Isolated idiopathic cutaneous calcification of the external genital organs is very rare and is seldom described in world literature. Single works deal with calcinosis of the scrotum (2, 4, 7—10). In 1988 Fayal et al. described a calcic nodule over the labium majus of a thirteen-year-old girl defining that lesion as the female counterpart of idiopathic scrotal calcinosis (3). They, too, suggested the name: idiopathic vulvar calcinosis.

Idiopathic scrotal calcinosis has been used to describe a disorder characterized clinically by firm, solitary or multiple, asymptomatic nodules of the scrotum that commonly appear during childhood or early adulthood (9). Such lesions are usually asymptomatic, however mild prurits and draining of chalky material have been observed. On chemical analysis, this material was shown to contain calcium, phosphate, and carbonate ions (9). The cause of this condition is unknown, however, some theories have been suggested. It may be dystrophic calcification secondary to minor trauma, or it may be dystrophic calcification of the dartos muscle (4). There have been cases described of calcification of epidermal cysts of the scrotum (10) or in steatocystoma (7). Song, Lee and Kang (8), too, suggest — on the basis of their own cases — that idiopathic scrotal calcinosis originates from dystrophic calcification of cysts. Dare and Axelsen (2) suggest the introduction of the term "hydrocalcinosis of the scrotum" as being different from calcinosis cutis. This suggestion was made because they observed, on the basis of their own cases, the calcification of eccrine duct milia, and in one case, the researchers found ultrastructural features of such differentiation. As results from the above opinions, the causes of *calcinosis idiopathica* are still in a sphere of hypotheses. Our cases of isolated calcification of the genital area have been classified as cases of idiopathic calcification.

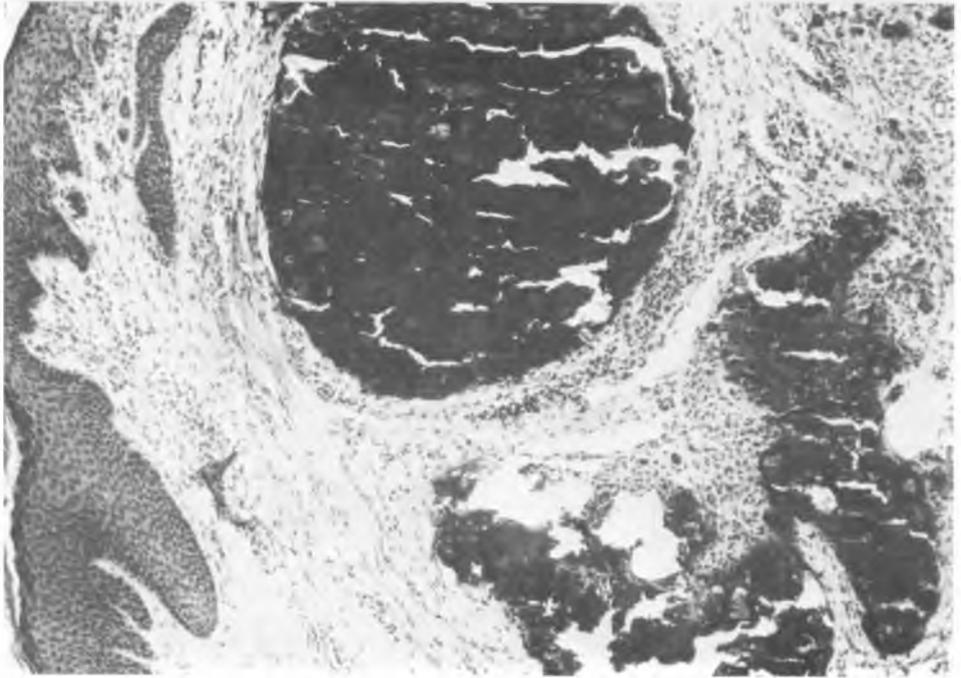


Fig. 1

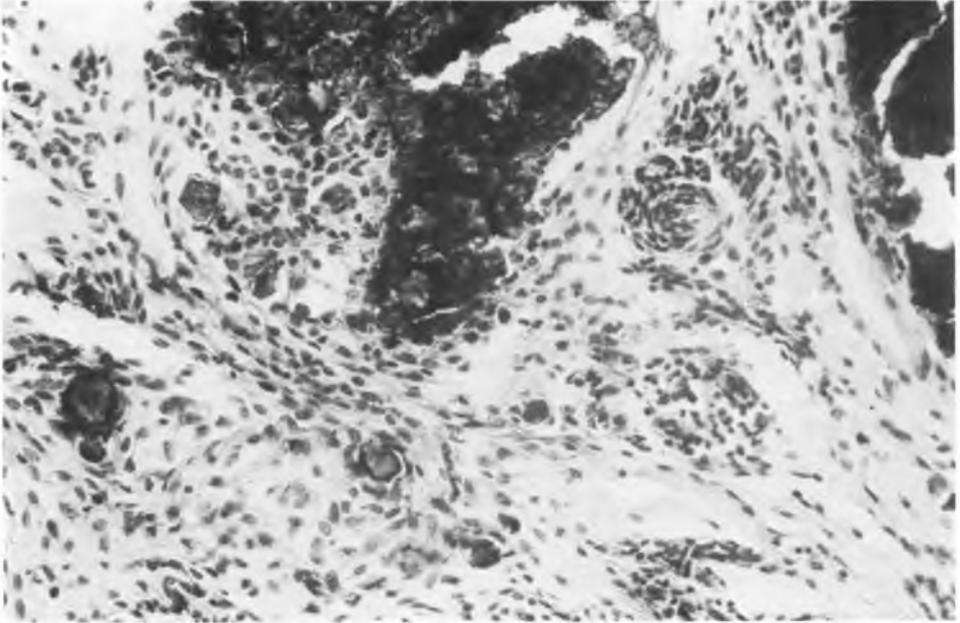


Fig. 2

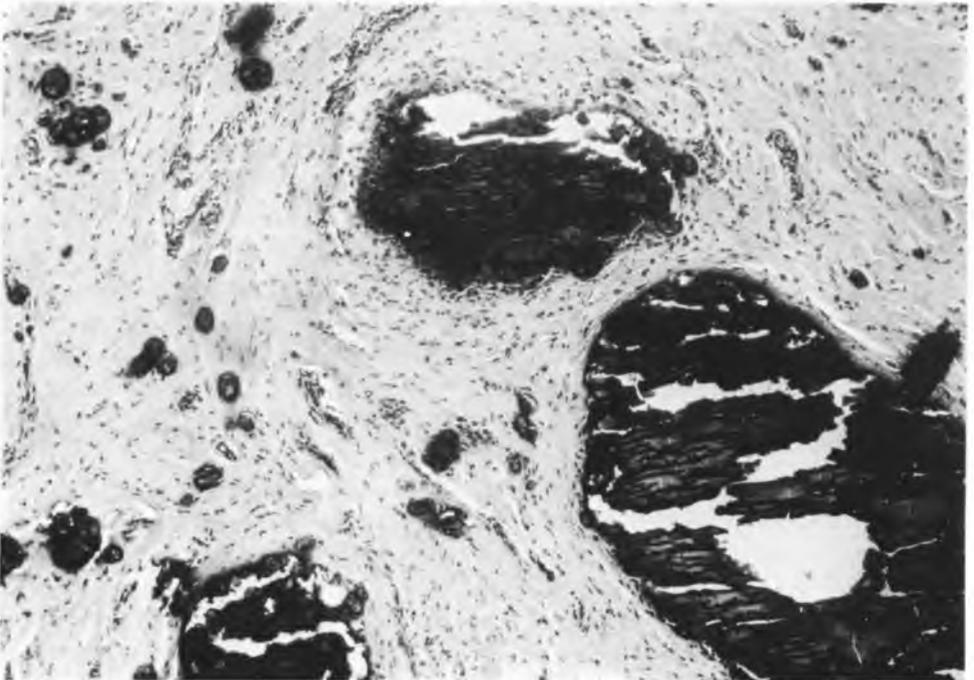


Fig. 3

There was no indication of an associated systemic disease and the results of laboratory investigations were all normal. There was also no history of a preceding trauma, nor evidence of any locally existing disease process of the genital area.

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EXPLANATION TO FIGURES

Fig. 1. Case 1. Big, round, basophilic staining subepidermal calcium deposits in the skin (penis). Around them, inflammatory reaction and granulation. Hematoxylin and eosin. Magn. 80 ×.

Fig. 2. Case 1. There are two kinds of calcium deposits: large amorphic masses and fine concentric ones beside them. Around the deposits, weak inflammatory reaction and fibrosis. Hematoxylin and eosin. Magn. 160 ×.

Fig. 3. Case 2. Fine and large round subepidermal calcium deposits in the skin (scrotum). Around the deposits, diffused inflammatory cells. Fibrosis marked. Hematoxylin and eosin. Magn. 80 ×.

STRESZCZENIE

Opisano przypadki wapienia skóry narządów płciowych zewnętrznych — moszny i prącia u 2 mężczyzn w wieku 16 i 26 lat. W wyniku przeprowadzonych badań klinicznych i histopatologicznych zaliczono je do odosobnionego, idiopatycznego wapienia skóry narządów płciowych zewnętrznych. Zmiany tego rodzaju występują niezwykle rzadko w skórze moszny. Nie opisano dotychczas wapienia idiopatycznego skóry prącia.

