Do Brown Marmorated Stink Bug Eggs Can Be a Factor of Vulvovaginal Inflammation? Clinical Case

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ABSTRACT

Background: Biologists explain the dominance of stinky bugs (Halyomorpha halys) in Europe, Russia, and Ukraine in the summer of 2019 and 2020 with an abnormally hot summer.

Clinical case: During gynecological examination of 29 years old woman in the outpatient department with complaints of discomfort on the external genitalia were revealed more than 20 white foreign bodies. In 3 days, a white bug (Halyomorpha halys) was identified from white foreign bodies.

Keywords: stink bug, Halyomorpha halys, vaginal.

I. INTRODUCTION

The Asiatic stink bug Halyomorpha halys from the family of bugs of the bugs Pentatomidae of the Hemiptera order. In Europe and the United States, the marble bug is a serious agricultural pest [1], [2], [8].

The homeland of the brown marble bug is the countries of Southeast Asia, the USA, Europe, and Turkey. The insect most likely entered our region through the port or through the territory of Russia. Most often, it is imported along with vegetables and fruits from Southeast Asia.

Biologists explain the dominance of stinky bugs in Europe, Russia, and Ukraine in the summer of 2019 and 2020 with an abnormally hot summer. It turns out that the weather, which terrorized Europeans for several weeks, is very favorable for insects. The invasion of the tree bug was especially activated in 2019 in Odessa, insects attacked not only parks, but also just city streets, since baiting them is prohibited. According to residents of Odessa, beetles "fall" on people, on clothes and fly into baby carriages, and sometimes even into apartments [7].

II. CLINICAL CASE

On May 31, 2019, patient I, 29, applied to the gynecologist of the outpatient service for an examination. A resident of Odessa with complaints of discomfort on the external genitalia, which arose 10-12 hours after a vacation with children in the city park.

Gynecological examination revealed signs of colpitis and vulvovaginitis. At bimanual inspection – no pathological changes were noted. In the secretions from the vagina macroscopically revealed white ovoid granules, which resembled eggs in structure. In order to eliminate foreign white bodies as allergenic factors, white agents were, if possible, completely eliminated from the folds of the vaginal mucosa and selected in vessels for transportation and identification (Fig. 1).

At microbiological inspection in a vagina against moderate leukocytosis to 40-50 in the field of view the mixed coccal flora with single lactobacilli was present. The patient was recommended combined vaginal suppositories Neotrizol...
(Ornidazole 500 mg miconazole nitrate 100 mg neomycin sulfate 100 mg prednisolone 3 mg) at night for 8 days.

Fig. 1. Removed white obscure foreign bodies from the vagina, which look like eggs.

According to the woman, she has one sexual partner, but at her request for a detailed examination, a wide range of examinations were conducted. The result of liquid cytology NILM (type 1), oncogenic strains of papillomavirus lesions during PCR revealed 16 (4.3 lg WRC / 100 thousand cells) and 33 genotypes (4.9 lg WRC / 100 thousand cells), no Chlamydia trachomatis, Mycoplasma hominis and genitalium, Ureaplasma urealyticum. In microbiological culture of vaginal secretions Staphylococcus aureus 10^7 and Bacillus spp. 10^7.

Ultrasound of the vaginal examination revealed no pathological changes on the part of the internal genitals.

At the request of the woman at inspection of hormones of TSH 1.58 mU/l (1 norm), the level of the general vitamin D in blood serum is 14.8 ng/ml (deficiency from 10-30 ng/ml).

Already on the first day of treatment - removal of foreign bodies from the vagina and the use of vaginal treatment, the patient had a significant reduction in clinical symptoms. As the patient sought gynecological care on Friday, May 31, 2019, on Friday afternoon, the container with the removed agents was left until the working day. On Monday, June 3, 2019, from the very morning, a white bug (Halyomorpha halys) was identified from white foreign bodies (Fig. 2).

Fig. 2. Hatching of bedbugs from eggs for 2-3 days after removing them from the vagina.

This clinical case is unique both in nature and in the treatment of a patient with this problem. Parasite eggs were the primary identification but were several times the size of pinworm and roundworm eggs. The size and epidemiological history of cow and pork tapeworm eggs were also inconsistent. There was also no contact with black ants, and so many of them could not be eliminated from the vagina without the presence of ants. We studied the epidemiological situation of skunk bug among women with pathology of the reproductive system on the basis of a literature database (PubMed, Medline, Google Scholar, PLoS, Hindawi) and did not find similar clinical situations. Skunk bug reproduces on plants and the mechanism of its invasion into the female genitals can only be accidental.

III. DISCUSSION

The skunk bug is the only insect that has become ubiquitous. Today, pests can be found in countries such as Russia, Ukraine (mainly Odessa), Africa, Australia. Due to such an extensive invasion, the parasite destroys large-scale crops of fields, fruit trees and citrus fruits, which affects the efficiency of the harvest and leads to an increase in the price of products [4].

Peculiarities of ecology and climate change in recent years in Europe and Ukraine in particular, led to the invasion of bedbugs not only in agricultural areas, but also in the industrial city of Odessa in 2019. The lack of a centralized program of chemical elimination of bedbugs does not stop their reproduction. Since 2016, in the countries of Southeast Asia, Turkey, Abkhazia, Georgia and Europe, significant yield losses began on subtropical crops. In 2017 alone, the marble bug destroyed about half of the total tangerine crop [3]. It is noted that the insect is unpretentious to its habitat, and accordingly can settle both in a human house and on the street. Typically, marble bugs settle in animal burrows, bird nests, farm sheds and basements. Feels equally good in damp and hot environments. Immediately after wintering, the pest actively tries to find food for itself, damaging the shoots of young plants. With the onset of spring (from about mid-April), the female marble bug begins to lay eggs, attaching them to the back of the leaves in small heaps, which number from 20 to 30 embryos. The bug’s eggs are white and spherical. Each is approximately one and a half millimeters in diameter. After two or three weeks, larvae emerge from the eggs. Like most representatives of this species, the larvae (nymphs) of the bug in the process of formation go through five stages or ages, and the entire period of formation into an adult insect takes from 35 to 45 days. In spring, the female lays white globular eggs, 1.3 to 1.6 mm in size. Usually, she attaches them to the underside of the leaf in clusters of 20-30 eggs. One female lays up to 300-500 eggs in one generation, doing it in clusters - up to 30 spherical eggs. After hatching, the young offspring are called nymphs (larvae). They go through five stages of growing up to become adults. The pest can reproduce up to 3 generations per year (Fig. 3) [5], [6].

In some cases, people in whose house or apartment bugs have made their way may be allergic to smell and bites. If an insect gets on bedding or hygiene items, a person with weak immunity has itchy skin rashes, therefore, the pest must be removed as soon as possible. The bite of a marble bug is dangerous for humans because it causes an allergic reaction in the form of inflammation at the site of the bite, and in allergy sufferers, severe swelling, up to Quincke and other allergic manifestations.
IV. CONCLUSIONS

The clinical case we present describes bedbug as a factor of allergic vulvovaginitis and colpitis, which allows us to share experiences.

CONFLICT OF INTEREST

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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