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V. S. KOPCHA[1], YU. M. ANDREYCHYN[1], IA. I. IOSYK[1], YU. V. KOPCHA[2], L. V. RADETSKA[1], I. I. HANBERGER[1] (Ternopil)

HIV INFECTION DIAGNOSTICS DUE TO CLINICAL EVIDENCE

[1]I. Horbachevsky Ternopil State Medical University,
[2]Ternopil City Municipal Emergency Hospital <kopcha@ukr.net>

The aim of the study was to describe the diagnosis of HIV infection in a socially orderly person due to clinical evidence. A young socially successful man, on the basis of clinical considerations, underwent respective examination, which allowed diagnosis of HIV infection. The disease was not manifested by typical signs of clinical stage I, but by primary Herpes zoster and recurrent paratonsillar abscess. The wife of the patient was healthy. The hypothetical transmission of the infection was not established. The possibility of HIV infection in socially orderly individuals has been confirmed taking into account relevant clinical indications, first and foremost the episode of Herpes zoster in a young person with no obvious causes of immunodeficiency. Despite the guidelines for a revised clinical classification of HIV infection in adults and adolescents (WHO, 2006), persistent generalized lymphadenopathy is unessential in the clinical stage I and Herpes zoster may be manifested earlier the clinical stage II.

Key words: *Herpes zoster*; paratonsillar abscess; HIV infection; diagnostics.

By the global significance, the most prevalent infectious diseases are left behind the HIV infection. Contrary to all countering measures taken, the pandemic HIV infection carries on.

In the estimation of UNAIDS, since the beginning of the HIV epidemic, 78 million people have been infected with HIV, and 35 million have died from AIDS related illnesses. By the end of 2015, there were 36.7 million people suffering from HIV on the Earth [2, 9].

About 7,000 people are infected with HIV every day in the world, and 9 of 10 do not know about infection before the examination [6]. Every day in Ukraine, 52 new cases of infection are officially registered. Eight people die as a consequence of AIDS every day in Ukraine [5].

According to recent reports of the State Agency "Public Health Centre of the Ministry of Health of Ukraine":

– in the country in 1987–2016, 297 424 cases of HIV infection were officially registered among Ukrainian citizens, including 92 897 cases of AIDS and 41 710 AIDS-related deaths;
– as of January 01, 2017, almost 133 thousand HIV-infected persons are under medical supervision, every third of them are diagnosed with AIDS [1, 3].

In 2016, the increase in the number of HIV-infected people was registered in Ukraine – 17 066 compared to 15 869 in 2015, the rate of increase was 7.5 %, the incidence rate reached 40.0 per 100 thousand population versus 37.0 per 100 thousand in the previous year. Significant increase in the incidence of HIV infection was registered in Donetsk, Zakarpattia, Zaporizhzhia, Kyiv, Luhansk, Mykolaiv, Ternopil, Kharkiv, Kherson regions and Kyiv [1].

In 2008, in Ukraine, there was a change in the dominant routes of HIV transmission from artificial parenteral in case of injecting drugs into sexually-transmitted, mainly in case of heterosexual contacts, which assumes an epidemic significance. In the structure

of HIV transmission (taking into account the rate of mother-to-child HIV transmission), the share of sexually transmitted disease increased steadily and in 2006 it was 72.5 % [2]. This explains the current dominance of primarily socially orderly segments of the population compared to those injecting drugs in the structure of the HIV-infected.

Severe immunodeficiency due to a progressive decrease in the number of CD4+ -lymphocytes and their functional insufficiency caused by HIV is the differential characteristic of HIV infection. Decrease in the number of CD4+-lymphocytes in cases of HIV infection increases the risk of opportunistic infections and AIDS-related lesions, which often have a combined course, that greatly exacerbates the overall patient general prognosis. Recurrent herpetic infection, *Herpes zoster* in particular, is one of such lesions.

The range of clinical manifestations of herpesvirus infections is characterized by considerable diversity. It depends on the localization of pathological process and its prevalence, the state of immune system of a macroorganism and antigenic type of the virus. The severity of the disease is primarily due to immunodeficiency states of various genesis, including HIV infection [7]. Thus, clinical manifestations of the infection, which was latent previously, can be severe against the background of immunodeficiency states, with the tendency to generalize and complications development that sometimes determine the course and outcome of the underlying disease threatening the health and life of a patient.

It was established that herpesviruses can stimulate HIV, which is in the stage of provirus, and is a cofactor for HIV/AIDS progression. In this regard, herpetic infection is one of the important AIDS-defining illnesses.

Further, let us consider a case study.

Patient D., 36 years old (medical card of the inpatient patient No. 1-2969), was admitted to the Department of Infectious Diseases of TCMEH on June 1, 2017, diagnosed with primary herpes zoster, cranial form with trigeminal nerve branch I damage at the right.

Complains of severe pain in the right half of the head, discomfort in the right tonsil, skin rash on the analogous half of the forehead and paraporbital area, blur of vision of the right eye, enlargement of submandibular lymph nodes, body temperature 37.5 ºC, general malaise.

Present history. He had been ill for 5 days, since headache, and on May 31 a bullous rash was manifested on the forehead and scalp. The disease was associated with numerous stress situations during the previous month. He sought medical attention at the Department of Infectious Diseases on his own.

Past medical history. He was raised in a family of local officials. He had a college degree in law; was a head of one of the local government departments; together with his wife, he brought up a 9-year-old child; no social habits. He denied any psychotropic agents injections as well as extramarital sexual relations. 10 years before that he underwent a spontaneous surgery of pneumothorax, and 5 years ago – of right paratonsillar abscess. At that time he often suffered from acute respiratory viral infections.

Clinician-observed: a general condition of moderate severity. On the skin of the right half of scalp, forehead, paraporbital area there was copious vesicular rash on the background of swollen and hyperaemic skin (Fig. 1). Conjunctiva of the right eye was hyperemic. The increase, deformation and hyperaemia of the right tonsil and mucous membrane of the analogous paratonsillar area were observed (Fig. 2). Enlarged, unpainful mandibular lymph nodes were palpable.

Pulse was 78 bpm. Cardiac performance rhythmic, tones loud. Arterial blood pressure 120/80 mm Hg. In lungs, vesicular breathing with no rales and dyspnoea. Liver protruded below the costal margin by 2 cm. Pasternatsky's symptom negative on both sides. No meningeal signs were noticed.

The treatment prescribed: valavir (2 tablets three times/day), milgamma (2 ml once/day intramuscularly), dicloberl 3 ml intramuscularly, myramydez locally, neuralgin 300 mg once/ night, proxium 1 tablet in the morning.

Laboratory examination results: complete blood count – increased ESR up to 55 mm/h, other indicators in norm. Biochemical blood test, coagulogram, common urine test, feces analysis proved no abnormalities.

Fig. 1. Patient D., primary *Herpes zoster* and trigeminal nerve branch I damage at the right

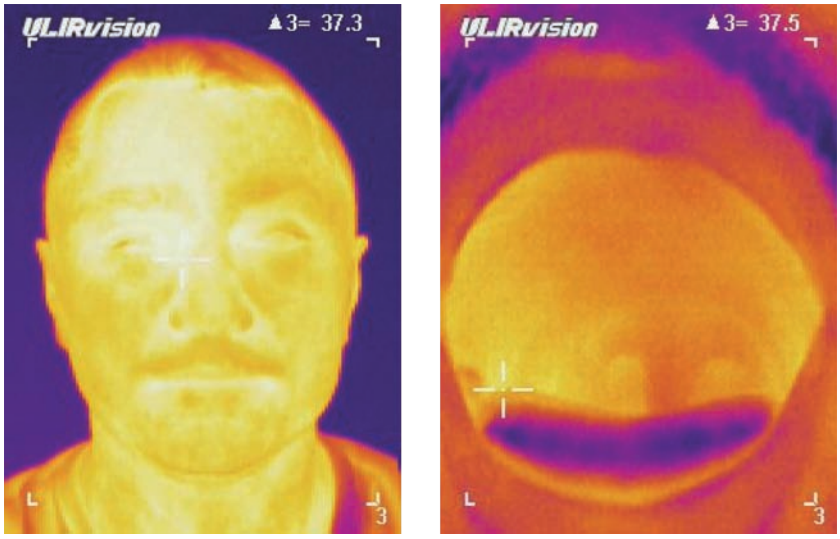
Fig. 2. Oropharynx of the patient

Ultrasound (June 7): liver enlarged, Oblique Y-Dimension 173 mm, left lobe – 55 mm, contours clear. Echostructure of parenchyma fine-grit, parenchymal echogenicityis enhanced. No varicose liver veins. Vena portae – 11 mm. No concretions in gall bladder.

Spleen contours clear, sizes 124 × 52 mm.

Pancreas, kidneys – no changes.

The thermographic examination proved hyperthermia of the right half of forehead and analogous periorbital area ($\Delta T = 0.6$ ºC), as well as the heating of paratonsillar area at the right ($\Delta T = 0.8$ ºC, fig. 3).



a *b*

Fig. 3. Thermogram of the face (*a*) and oropharynx (*b*) of the patient

On the day of admission the ophthalmologist examination was performed: conjunctiva of the right eye hyperemic, mixed blood vessels injection. Cornea clean, iris structural, optical medium transparent. Left eye – no changes. Eyelid: optic nerve disc pink, clear borders, arteries and veins in norm. Right viral conjunctivitis was diagnosed.

The treatment was supplemented with laferobionum 1 drop 6–8 times/day, floximed 1 drop 4 times/day, clodifen 1 drop 4 times/day.

On June 5, pain became more severe in the right half of the throat, which increased when swallow, dysphagia, trismus emerged, body temperature increased up to 38 ºC, which was temporarily (up to 5–6 h) reduced with anti-inflammatory drugs. Significant oedema of the right

paratonsillar area, enlarged tonsil, oedema and hyperaemia of the tongue, its sharp left laterodeviation. The ENT specialist diagnosed a right paratonsillar abscess, after its lancing about 15 ml of manure was discharged. Before the treatment, loraxone was added 1.0 intramuscularly twice/day.

Cases of repeated paratonsillar abscess (5 years ago, the patient was treated for this diagnosis) were established; they were caused by compromised tissue immunity and the corresponding predisposition [8]. However, according to other clinical evidence (a history of frequent ARVI, the case of *Herpes zoster* in the young person) the patient was examined for HIV infection. Thus, specific HIV antibodies were detected in the ELISA test.

Final diagnosis: HIV infection, I clinical stage. Primary herpes zoster, cranial form with trigeminal nerve branch I damage at the right. Right viral conjunctivitis. Right paratonsillar abscess (detected on June 5, 2017).

In 10 days after the beginning of the treatment, the pain in the area of the lesion decreased significantly, all vesicles and erosions were covered with scabs, no new rash. The general condition of the patient improved. However, paraesthesia and oedema of the affected area continued. Being in a relatively satisfactory state in 22 days he was discharged home. The patient was registered with Ternopil Regional Centre for AIDS Prevention and Control. The level of $CD4^+$-lymphocytes was investigated in 2 months after patient's discharge from the hospital. At that time, the absolute number of these cells exceeded 582 CELLS/uL of blood (value 576-1336 CELLS/uL), and the viral load was 160 RNA copies/ml. Within the next 3 months of the outpatient observations after the treatment no herpesvirus infections recurred. Patient's state of health was quite satisfactory.

Laboratory examination for HIV infection of the patient's wife proved negative results.

The possibility of HIV infection in orderly safe individuals is confirmed once more by this example taking into account relevant clinical indications, first and foremost the episode of Herpes zoster in the young person with no obvious causes of immunodeficiency. Despite the guidelines for a revised clinical classification of HIV infection in adults and adolescents (WHO, 2006), persistent generalized lymphadenopathy is unessential in the clinical stage I and *Herpes zoster* may be manifested earlier the clinical stage II. Please note that for the implementation of epidemiological surveillance WHO recommends to evaluate the absolute and relative number of $CD4^+$-lymphocytes above all [4]. In the case presented, this rate exceeded 500 cells/mcl of blood that corresponds to HIV infection of clinical stage I.

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ДІАГНОСТИКА ВІЛ-ІНФЕКЦІЇ ЗА КЛІНІЧНИМИ ОЗНАКАМИ

В. С. Копча, Ю. М. Андрейчин, Я. І. Йосик, Ю. В. Копча, Л. В. Радецька, І. І. Ганьбергер (Тернопіль)

У статті описано діагностику ВІЛ-інфекції. У соціально благополучного чоловіка молодого віку на підставі клінічних показань було призначено відповідне обстеження, що дозволило діагностувати ВІЛ-інфекцію. У хворого не виявлено типових ознак І клінічної стадії, а маніфестувало захворювання первинним оперізуючим герпесом і повторним паратонзилярним абсцесом. Дружина хворого здорова. Імовірний шлях інфікування не встановлено. Отже, підтверджено можливість ВІЛ-інфекції у соціально благополучних осіб з урахуванням відповідних клінічних показань, насамперед епізоду оперізуючого герпесу в особи молодого віку без видимих причин імунодефіциту. Незважаючи на орієнтири переглянутої клінічної класифікації стадій ВІЛ-інфекції у дорослих і підлітків (ВООЗ, 2006 р.), на етапі І клінічної стадії персистуюча генералізована лімфаденопатія не є обов`язковою, а оперізуючий герпес може маніфестувати раніше ІІ клінічної стадії.

Ключові слова: оперізуючий герпес; паратонзилярний абсцес; ВІЛ-інфекція; діагностика.

ДИАГНОСТИКА ВИЧ-ИНФЕКЦИИ ПО КЛИНИЧЕСКИМ ПРИЗНАКАМ

В. С. Копча, Ю. М. Андрейчин, Я. И. Иосык, Ю. В. Копча, Л. В. Радецкая, И. И. Ганьбергер (Тернополь)

В статье описана диагностика ВИЧ-инфекции. У социально благополучного мужчины молодого возраста на основании клинических признаков было назначено соответствующее обследование, позволившее диагностировать ВИЧ-инфекцию. У больного не выявлено типичных признаков I клинической стадии, а манифестировало заболевание первичным опоясывающим герпесом и повторным паратонзиллярным абсцессом. Жена больного здорова. Вероятный путь инфицирования не установлен. Следовательно, подтверждена возможность ВИЧ-инфекции у социально благополучных лиц с учётом соответствующих клинических признаков, прежде всего эпизода опоясывающего герпеса у лица молодого возраста без видимых причин иммунодефицита. Несмотря на ориентиры пересмотренной клинической классификации стадий ВИЧ-инфекции у взрослых и подростков (ВОЗ, 2006 г.), на этапе I клинической стадии персистирующая генерализованная лимфаденопатия не является обязательной, а опоясывающий герпес может манифестировать раньше II клинической стадии.

Ключевые слова: опоясывающий герпес; паратонзиллярный абсцесс; ВИЧ-инфекция; диагностика.