German doctors find vision problems linked to syphilis

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In the past decade, outbreaks of many sexually transmitted infections (STIs), including syphilis, have occurred in high-income countries. In many cases, these outbreaks continue and have particularly affected gay and bisexual men.

Syphilis is easily spread in the following ways:

- kissing
- unprotected anal, oral and vaginal contact
- sharing needles and other equipment for substance use
- from mother to child during birth

Germs and nerves

Treponemes, the germs that cause syphilis, can cause swelling, redness and sores on or in the anus, mouth, penis and vagina. This damaged tissue can be an entry point for HIV and other STIs, helping them get inside the body. Once inside the body, treponemes, like HIV, can enter the bloodstream or lymphatic system. From there, treponemes can quickly spread throughout the body and reach the brain. If left untreated, syphilis can cause damage to the brain, spinal cord, nerves and organs.

Researchers at Berlin’s major medical centre, Charité-University Hospital, have noticed an alarming trend. Over the past eight years, there has been an increase in a previously rare condition: eye complications from syphilis (ocular syphilis). What is disturbing about their finding is that 50% of patients with this problem were HIV positive, half of whom had no idea that they were HIV positive, much less suffering from syphilis. The Berlin doctors encourage other physicians to test people who are diagnosed with syphilis for HIV co-infection.

Help wanted

Between 1998 and 2006, 24 people (with 41 affected eyes) sought help in 23 cases for eye problems (in the remaining case because of drowsiness and psychotic behaviour). The symptoms reported by 23 people with eye problems were similar and included the following:

- blurred vision
- decreased ability to see clearly
- eye discomfort and pain

In some cases, symptoms had been present for as few as five days, in others for as long as three months.

Uncovered by testing

In total, 11 of the 24 patients were HIV positive. In seven of these 11 cases, patients had no idea that they had HIV. This co-infection was uncovered because the doctors ordered extensive tests to rule out other infectious causes of eye problems.

All 11 HIV positive patients were male and most of the ones who knew that they were HIV positive were not taking
HAART because they had modestly elevated CD4+ cell counts—between 500 and 800 cells. Such a range of CD4+ counts should be suggestive of a well-preserved immune system. However, it appears that such cell counts, in the presence of HIV infection, offer no protection from syphilis.

**Warning signs**

Fourteen of the 24 patients had inflammation on the mucous membranes (the wet tissues of the anus, penis, vagina and mouth), rashes on the palms of their hands and soles of their feet or ulcers in their mouth—all symptoms somewhat suggestive of syphilis.

In general, blood tests indicated syphilis except in one patient. That the blood tests could not confirm syphilis in one patient, despite obvious symptoms, reinforces previous findings that the immune systems of some people with HIV may be too weak to react to some syphilis blood tests. In the Berlin study, men with HIV co-infection also tended to have higher-than-normal levels of a marker of inflammation—C-reactive protein—in their blood. Nine of the patients who had symptoms of early syphilis were diagnosed with the dreaded and serious form of the disease—neurosyphilis. This suggests that treponemes were attacking the brain and spinal cord.

**Treatment**

The doctors prescribed 10 consecutive days of intravenous antibiotics—penicillin or ceftriaxone. In all but one of the cases, certain symptoms, such as pain and discomfort affecting the eye, improved. While nobody went blind, vision did not improve in all of the patients.

**Other studies**

Previous research on syphilis in HIV positive people suggested that there is a higher risk of neurosyphilis when the CD4+ count falls to 350 cells or lower. However, in the present study, neurosyphilis occurred at higher CD4+ cell counts, averaging about 450 cells. Some researchers have argued that ocular syphilis should be considered a form of neurosyphilis. Also previously, American syphilis experts found that treponemes can invade the brain early after infection, whether or not a person has HIV.

**Not just Germany**

Doctors in Australia, France, the Netherlands, Peru, Spain and the United States have also recently reported the problem of ocular syphilis, mostly in MSM. This emphasizes the worldwide nature of the current increase in syphilis.

The findings from the German study underscore the importance of protected sex and frequent medical monitoring for sexually active people, in particular, testing for syphilis and HIV.

—Sean R. Hosein

**REFERENCES:**

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