Kaposi’s sarcoma—past and future

One of the hallmarks of AIDS, particularly in the early years of the pandemic, was the appearance of skin tumours called Kaposi’s sarcoma (KS). During the 1980s, KS was very common in people with AIDS. Indeed, in those years, sometimes the only initial signal of immune dysfunction was KS.

Nearly three decades later, KS is now relatively uncommon in high-income countries. Yet reports have recently emerged of KS outbreaks in these countries in both HIV positive and HIV negative men who have sex with men (MSM).

To gain some insight into the possible future of KS, it may be useful to take a closer look at KS in the time before AIDS.

Last century

During most of the 20th century, in the time before AIDS, KS was a relatively uncommon skin tumour in the high-income regions of North America, Western Europe and Australia.

When everything changed

In the late 1970s, medical records suggested that a small but growing outbreak of immune deficiency-related diseases had occurred almost simultaneously in North America, Haiti, Western Europe and Central and East Africa. The people who developed these problems were previously healthy and relatively young adults who were not taking drugs to suppress their immune systems. Further research suggested that some factors that these people acquired (rather than a factor with which they were born or inherited)—such as an infection with a novel germ—made them susceptible to immune deficiency.

The KS that occurred in these and in future cases of acquired immune deficiency was not restricted to the feet or legs but could strike anywhere on the body. Moreover, in some cases, KS tumours would grow inside people, in lymph nodes or near vital organs/systems such as the lungs, heart and intestine. In such situations, KS lesions would block blood or lymph vessels, causing fluid to build up and degrading affected organs and eventually the whole person. In this period of time, treatments for this aggressive form of KS were generally not effective.

Affected people also had to contend with life-threatening infections. By the early 1980s, these cases of immune deficiency-related diseases were called AIDS. In 1983, French scientists were able to isolate the cause of AIDS, a virus we now call HIV.

In the United States and Western Europe, new cases of KS began to decline in the mid-to-late 1980s, and now KS is not as common as it once was. (Indeed, there was a time when half of all AIDS cases in the US had KS.) The reasons for this change are not clear. Some researchers speculate that perhaps a reduction in unsafe sexual behaviour was responsible, yet this does not seem to be the case.

Another feature of KS that remains unexplained is the odd geographic distribution of KS cases. For instance, KS was and still is more likely to be found in the coastal cities of New York, Los Angeles and San Francisco than in cities far away from the coast. And even within coastal cities, there were differences in the distribution of KS (Nathaniel Pier MD, personal communication).

In Canada, in the urban centres that were the original focus of the AIDS epidemic (Montreal, Toronto and Vancouver), the proportion of men with AIDS-related KS was greater than in other parts of Canada.

The cause(s) of KS
Researchers studying KS lesions have been able to isolate viruses from the herpes family, so they suspected that one of these viruses could be the cause of KS. In the mid-1990s, one team zeroed in on a virus called HHV-8 (human herpes virus-8), or KSHV (Kaposi’s sarcoma herpes virus), and suggested that it was the cause of KS tumours.

But more recent research suggests that while HHV-8 may be necessary for the formation of KS, there are likely other co-factors that may play a role in triggering the development of KS lesions. These co-factors could include the following:

- drugs that weaken the immune system, such as corticosteroids, and other drugs used in transplant recipients
- environmental factors (perhaps prolonged exposure to volcanic soils)
- other viruses
- genes
- other, as yet unknown factors

**HAART and KS**

The introduction of HAART made many previously stubborn cases of KS regress, usually after at least one year of therapy. Some researchers suspect that HAART has made KS even less common today. They speculate that a revitalized immune system is able to keep HHV-8 replication under control. In turn, this could explain why KS lesions are less common. Still, in cases where HAART has failed or been interrupted, KS can reappear.

**Is this the future?**

Doctors in San Francisco have reported a cluster of KS cases in HIV positive men. The men were all taking HAART and their CD4+ counts were above the 300-cell mark. This level of cells should protect them from many AIDS-related complications. Moreover, their viral loads were less than 300 copies—suggesting a relatively low level of HIV production. Some of the men had been taking HAART for as many as seven consecutive years.

Yet KS lesions still appeared on their skin. The doctors were unable to explain why this occurred. Also, doctors in London, UK, reported KS lesions in their patients whose viral loads were below the 50-copy mark and who had similar levels of CD4+ cells. They also could not explain why these cases had occurred. Perhaps clues as to why these men developed KS appear in our next story.

**REFERENCES:**


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