



Indian Man Becomes World's First Victim of 'Killer' Plant Fungus *Chondrostereum purpureum*

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Abstract

A person was infected with *Chondrostereum purpureum*, which led to flu-like symptoms. However, it results in silver leaf disease in the flora, most often in rose species. It is transmitted by spores in the air. It is so called because it often results in death and eventually turns leaves silver. But, doctors in India have revealed what they believe to be the first incidence of it ever infecting humans. A 61-year-old man who had been experiencing symptoms, including a cough, exhaustion, trouble swallowing, and a scratchy voice for three months sought treatment at The Apollo Multispecialty Hospitals in Kolkata. The individual had no medical history, in contrast to those considered to be the most vulnerable to fungal infections that are known to jump species, such as those with cancer, HIV, respiratory conditions, and organ transplants. Meanwhile, he was a plant mycologist, who was dealing with a variety of plant fungus and mushrooms.

Keywords: *Chondrostereum purpureum*, Killer, Plant fungus, Silver leaf disease

Introduction

Doctors think that a 61 years old male patient from Kolkata, India is the first person to have a sickness brought on by a plant fungus, *Chondrostereum purpureum*. They said that this case study illustrates how plant pathogens may cross over into people when in close contact with plant fungus (Economic Times, 2023). The patient had been suffering from anorexia for the previous three months, along with hoarseness of voice, cough, recurring pharyngitis, weariness, and difficulties swallowing (Dutta and Ray, 2023). He had no medical history of trauma, diabetes, HIV infection, renal disease, or any other chronic illness. According to physicians writing in the journal of Medical Mycology Case Reports, the patient was a plant mycologist who spent a lot of time doing research using decomposing matter, mushrooms, and different plant fungus (Economic Times, 2023; Sky News, 2023).

A chest X-ray was advised, and the results were normal. Nevertheless, a right paratracheal abscess was found during his neck's CT scan. For further testing, the physicians

drained out the pus. Several tests failed to identify the fungus phenotypically, therefore it was submitted to India's "WHO Collaborating Centre for Reference & Research on Fungi of Medical Importance." By sequencing its DNA, *Chondrostereum purpureum* was identified (Economic Times, 2023). Doctors said that a number of zoonotic viral and bacterial illnesses, as well as novel fungal infections, may have emerged due to global warming, ecological disruption, worldwide travel, and unplanned urbanization (Dutta and Ray, 2023).

How the Fungal Infection was Revealed?

The infection resulted in a paratracheal abscess in the man's neck, partly restricting his airway, according to scans performed at the hospital. After draining the fluid, doctors gave the guy two months of daily antifungal medication (DNA, 2023; Sky News, 2023). He is said to be "totally OK" and the illness has not reappeared two years later. Yet in a paper published in the Medical Mycology Case Reports journal, the doctors who treated him said that the man's unusual case "raises significant doubts" about the capacity

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of plant pathogens to infect healthy people and animals with sickness. “The fungus may establish themselves as human infections if they can escape the phagocytosis route and are able to elude the host immune system,” they said (Dutta and Ray, 2023).

Characteristics and Symptoms of *Chondrostereum purpureum*

The fungus plant pathogen *Chondrostereum purpureum* is responsible for the fungus disease silver leaf, which affects trees. It targets the majority of the Rosaceae species of roses, especially Prunus. The illness progresses and often ends in death. The popular name derives from the leaves on the infected branches gradually becoming silver. Airborne spores that settle on recently exposed sapwood are what cause it to spread. For this reason, cherries and plums are clipped in the summer (DNA, 2023), when illness is obvious and spores are least likely to be present. Silver leaf may also appear on poming fruits like apples and pears (Wikipedia, 2023). Plums are very weak. It affects a number of deciduous tree species, such as those of the genus *Acer*, *Aesculus*, *Alnus*, *Betula*, *Crataegus*, *Fagus*, *Larix*, *Malus*, *Ostrya*, *Picea*, *Populus*, *Prunus*, *Salix*, and *Sorbus*.

The fruiting structure, which first appeared as only a crust on the wood, eventually grows tough, rubbery intergrowing brackets that are up to 3 cm wide. As the fungus is developing, the fertile bottom surfaces and margins have a rather bright violet color, while the top surfaces have a grey appearance, and are coated with white hairs (Wikipedia, 2023). The fructification dries up, gets brittle, and becomes a dull brown or beige after a week or two (Wikipedia, 2023). Wood that has been infected has a deeper hue to its stain, making it easy to see. The spores are spherical cylinders that measure around 5-8 µm × 3-4 µm. While it may be a significant parasite of live trees, it is often seen on old stumps and dead wood (Wikipedia, 2023). Together with plum trees, it also harms a variety of other broad-leaved plants. Geographically, it is about as prevalent as its hosts; in temperate regions, it may be found often in forests, orchards, and tree plantations.

According to a report, the patient saw a doctor after experiencing hoarseness in their voice, a cough, exhaustion, and trouble swallowing for three months (DNA, 2023). Also, he developed a paratracheal abscess in his neck. A fungus infection was discovered after analysing the pus samples. Fever, a painful throat, odynophagia, and swelling in the neck all the way down to the hyoid bone are common symptoms of paratracheal abscess (Wikipedia, 2023).

Are Fungi Infections Fatal for Human Beings?

According to studies, just a small number of fungi that exist in the environment have the ability to infect people and other animals. “Fungal species that can flourish between 35 and 37 °C may develop into human pathogens or commensal flora. According to Dutta and Ray (2023), consultants at Apollo Multispecialty Hospitals in Kolkata, the virus enters the human body *via* damaged skin and the respiratory system and may cause illness in susceptible people (Sky News, 2023). The mycologist often deals with fungus, which is likely how he contracted the illness.

The rose family is often targeted by the fungus plant pathogen *Chondrostereum purpureum* (Wikipedia, 2023). The fungus plant pathogen *Chondrostereum purpureum* causes the fungus disease known as the silver leaf, which affects trees. It mostly targets members of the rose family. The illness progresses and often ends in death. The popular name derives from the leaves on the infected branches gradually becoming silver. Airborne spores that settle on recently exposed sapwood are what cause it to spread (DNA, 2023; Dutta and Ray, 2023).

Should We be Concerned?

As a result of climate change, it has been feared that both well-known and newly discovered fungus might become dangerous because they have adapted to live in a hotter environment. According to mycologists, Prof. Bignell (Sky News, 2023), discuss “the notion of pathogens in waiting” - pathogens that are common in the environment and may afflict humans if the correct circumstances exist. The World Health Organization (WHO) compiled a list last year that it believes potentially endangers public health. During the COVID epidemic, the WHO also noted a “significant” rise in fungus infections (DNA, 2023; Sky News, 2023).

Conclusion

Chondrostereum purpureum is a fungal plant pathogen. It is often referred to as “violet fungus” and may infect people. The article also disclosed that sequencing is the only way to determine who this individual is. The report said that “this instance emphasizes the necessity of genetic methods to identify the causal fungus species and underscores the possibility of environmental plant fungi to cause illness in people.” The patient was given a course of antifungal medicine, and researches also noted that after two years of follow-up, the patient was in perfect health and there was no sign of a recurrence (Dutta and Ray, 2023). Moreover, it is thought that both well-known and newly discovered fungus might become potential dangers as a result of learning to exist on a hotter globe as a result of climate change. There is no reason for concern, and scientists emphasize that further study is necessary to determine how these fungi may impact both people and animals.

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