

CREATIVE SPACE

Of moulds and medals

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The white and fluffy mycelial growth that I had observed 48 hours ago had turned a mottled grey. I inverted the plate of Sabouraud's dextrose agar (SDA) to examine its reverse. A sinister ochre stared at me.

So this was the fungus gnawing away at young Guna's brain. The mould that had turned a small portion of his brain into mush – the thick, yellow pus that now defiantly sat in a sterile container in our laboratory.

The fungus baffled us. It did not look like any mould that could commonly cause an abscess in the brain.

Bewildered in-house experts jostled to peer into the microscope to identify the sprouted fungus. Both narrow and broad hyphal structures, branched and septate, and some pigmented, lay strewn on the microscopic field. Chains of thick-walled, bizarre-looking spores zigzagged athwart the slide.

Agar tubes dotted with offspring of the mould were shipped across to mycologists in the country and photographs of the fungus were beamed on the World Wide Web to seek the opinion of international specialists.

Eighteen-year-old Guna, the only son of a labourer from a village in neighbouring Tamil Nadu, lay stuporous in the ICU of our hospital, oblivious to the fuss over the curious fungus that had made its way into his brain.

Guna's father, a reedy, emaciated figure, seemingly dejected and lost, was a perpetual presence on the hospital corridors. Despite being informed about the dismal prognosis of his son's illness, he seldom spoke. His silence was discomfiting.

Guna had apparently been hale and hearty until he woke up with fever and headache one morning, two weeks ago. He had thrown up multiple times and it was only when he developed weakness of the right half of his body that his illiterate mother rushed him to the local primary health centre. He had been referred to our hospital when he started deteriorating further. A brain MRI revealed an abscess ensconced in his left frontal lobe. A stereotactic aspiration had yielded the purulent

material which sprouted the strange fungus on the nutritive culture medium in the lab.

The fungus was unequivocally christened *Dimicyclina mangiferinum** by the mycologists, Indian and foreign alike. It was an uncommon fungus, but not an unknown one, they all said. But until then it had been known to cause only skin infections in humans. How it had lost its way to the brain of an apparently healthy, young, unsuspecting boy was a medical mystery.

On one of the rare occasions that he opened up, Guna's father fondly recollected how the gifted boy had completed school – something almost unheard of in their community. He added that Guna's mother was certain that her son was their saviour – who would one day free them from their hardships and poverty.

Guna was started on anti-fungal drugs and other supportive measures. Yet, he continued to worsen. A new anti-fungal drug recently approved for use in the USA was considered. However, it was not yet licensed for use in India and had never been tried for this particular fungal infection of the brain – obviously because it was the first time that *Dimicyclina mangiferinum* had caused a brain infection anywhere in the world!

The pharmaceutical company in the USA which manufactured the drug was contacted and they agreed to supply the extremely expensive drug free of cost to Guna. Heaps of paperwork was completed to ship the drug to Guna on a compassionate use protocol. Every staff member in the hospital involved in Guna's care was trying to save his life.

Whenever I came across Guna's father, I wondered whether he could truly comprehend the gravity of his only child's illness and the sincerity of our efforts to save him. He always appeared impassive and withdrawn. Was it his ignorance? Or had poverty numbed his angst?

The new drug seemed to curb the furious mould in his brain and infuse some life into Guna. He began to show clinical improvement.

I conveyed the encouraging development to Guna's father and believed I saw a flicker of joy in his eyes. We began to hope and pray for a miracle for Guna.

Alas! The optimistic response was short-lived. Guna slipped downhill once again and despite the best possible care afforded to him, lost the battle against the innocuous fungus.

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His hospital bill for almost eight weeks ran into several thousands, but the hospital waived the charges on compassionate grounds.

To validate that the *Dimicyclina mangiferinum* grown in the laboratory from the pus was truly a pathogen and not an imposter, it was vital that we confirm its active presence in Guna's brain. We sought consent from Guna's father for a partial autopsy to collect his brain for further testing and confirmation of the diagnosis.

Slices of the formalin fixed brain provided ample evidence of the onslaught of the fungus despite aggressive treatment. Under the microscope, fungal hyphae identical to what we saw in the aspirated pus, crisscrossed their way through the brain sections peppered with inflammatory cells. A few Giant cells that had struggled in vain to gobble up the hyphal filaments now lay still like tombstones of the tenacious mould.

We had indisputable clinical and laboratory evidence to publish the first case of a cerebral abscess in an immunocompetent adult caused by a rare and harmless skin mould, anywhere in the world! After several rounds of deliberations on the impact factor, citation index, readership and distribution, editorial board, acceptance rate etc, of various medical journals, we sent our manuscript to a reputed, high impact factor open access medical journal, which stipulated exorbitant publication fees.

It was accepted for publication and went on to win a medallion from the International Mycology Association. It remains one of the most highly cited papers in the field. Last week when it received its 100th citation, I was reminiscing about Guna, the young boy whose life was snuffed out a bit too soon by a mundane mould. Had his parents come to terms with the death of their only child?

I vividly remember my last meeting with Guna's father. He had come back to our hospital to complete some formalities a day after Guna's lifeless body was handed over to him. As soon as he saw me he respectfully folded his hands and greeted me. He looked weary and gaunt yet removed from the tragedy. He told me he had cremated the mortal remains of his son in Bangalore itself, since it was expensive to carry the body back to his village in Tamil Nadu.

I enquired about Guna's mother. I had not seen Guna's mother at any time during his hospital stay. How had she reacted to this tragic news of Guna's death? Hadn't she come to Bangalore for the cremation – to have a glimpse of her dear child one last time?

"Madam," he replied, with a vacant look in his eyes, "it costs ninety-five rupees by bus from my village to Bangalore. How could she possibly come?"

Note: *The name of the fungus used in the text is fictional.

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