

Reflection

The Cost of Waiting

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Introduction

The swelling on the right side of his face was no longer getting worse, but it had not disappeared. Months into antifungal therapy, the nineteen-year-old sat across from me in clinic, still waiting for the improvement that had never quite arrived. Yet the scans were beginning to tell a different story than the prescriptions we had been writing.

His illness had begun with symptoms that seemed deceptively ordinary—facial pain near the nose, mild nasal blockage, and low-grade fever. Initial treatment with antibiotics brought little improvement. Imaging eventually revealed extensive sinonasal disease with features concerning for invasive fungal infection, including orbital extension. Functional endoscopic sinus surgery was performed, and the pathology demonstrated fungal elements morphologically consistent with aspergillus, without evidence of tissue invasion.

At the time, the diagnosis felt reassuringly clear. Antifungal therapy was started, and by every measurable standard the treatment appeared appropriate.

Yet medicine has a quiet way of reminding us how easily early answers can anchor our thinking. Diagnostic labels often bring a sense of certainty, even as disease continues to evolve beyond the limits of our first explanation. Even our best tests capture only a moment in time; infections, however, continue to move forward. In an era of increasingly complex infections and evolving pathogens, diagnostic certainty often proves more fragile than we would like to believe.

The swelling never fully resolved.*The pain lingered.*

Follow-up imaging began to suggest that the infection had not truly retreated—it had only been advancing quietly. Sitting in clinic, I found myself wondering whether we were watching the disease evolve before us, or whether we had misunderstood it from the beginning.

As the months passed, the question of surgery surfaced repeatedly. Two surgical opinions suggested that immediate intervention was not required, emphasizing the complexity of operating near the orbit and skull base. Another surgical opinion proposed a short trial of steroids alongside antifungal therapy, considering the



possibility that an inflammatory component might be contributing to the persistent disease. From the infectious diseases perspective, however, the persistent symptoms and evolving imaging suggested that the infection was continuing to progress despite antifungal therapy. With each clinic visit, the question became harder to ignore: were we watching a treated infection slowly resolve, or an untreated one quietly advancing?

Something about the case felt wrong.

The infection, however, was not waiting for consensus.

Weeks later, repeat surgical intervention was performed. This time the pathology told a very different story. What had initially appeared to be non-invasive fungal disease now revealed broad aseptate hyphae with angioinvasion—features consistent with mucormycosis. Suddenly, the earlier months of the illness seemed to take on a different meaning.

Looking back, what once appeared to be controlled disease now seemed like an infection quietly advancing beneath the surface.

Invasive fungal infections of the sinuses and orbit challenge clinicians in ways few other infections do. Antifungals are essential, but they rarely substitute for surgical source control. Some infections announce themselves loudly, but others move silently through tissue

while clinicians deliberate over the safest course forward. For me as a fellow, the case became a lesson in advocacy. Infectious diseases physicians do not only choose antimicrobials—we often become the voice reminding the team that infection control sometimes requires more than medication alone. Invasive fungal infections remind us that antimicrobial therapy, however sophisticated, cannot replace the fundamental principle of source control.

This case also reminded me that medicine rarely unfolds through the decisions of a single clinician. Surgeons weigh anatomy and operative risk, while infectious diseases physicians weigh microbial progression and therapeutic limitations. Between these perspectives lies a narrow window where timing becomes as important as treatment.

When I think about that clinic visit now, I remember how stable the swelling appeared at the time. It felt like a moment of cautious reassurance. In retrospect, it was something else entirely—a reminder that infections move on their own timeline, often indifferent to our clinical comfort with uncertainty.

For the young patient sitting across from me in clinic, it was simply months of waiting for the swelling and pain to end.

Between antifungals and the operating room, timing itself becomes the treatment.

And sometimes the most important question in medicine is not which therapy to start next—but whether the infection can truly afford to wait.