

Fungal Infection – from Bad to Ugly

Atul Sharma*, Manish Singhal**, Sanjay Thulkar***



Fig 1 : Computed Tomography of the chest showing nodular consolidation with "halo sign"

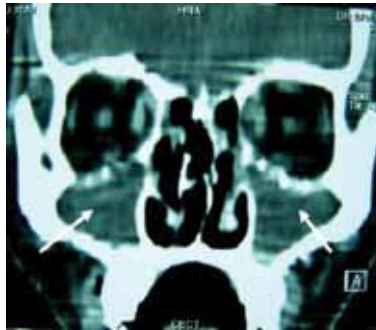


Fig. 2 : Computed Tomography of the paranasal sinus showing bilateral maxillary sinus opacification with bone irregularity



Fig 3 : Computed Tomography of the paranasal sinus showing maxillary sinusitis with bone erosion



Fig 4. : Perforation seen in the lateral nasal wall



Fig 5. : Perforation seen in the hard palate

A 19 year old male patient was diagnosed as a case of B-cell acute lymphoblastic leukemia (ALL) and started on induction chemotherapy with prednisolone, daunorubicin, vincristine and L-asparaginase. On day 10 he developed febrile neutropenia along with respiratory difficulty, crepitations in the left lower chest, and cellulitis of the nasal bridge. High resolution computed tomography (HRCT) of the chest and contrast enhanced CT (CECT) of the paranasal sinuses were done, and they revealed nodular consolidation in the left lung with typical 'Halo sign' (Fig.1), and high density opacification of bilateral maxillary sinuses along with bone surface irregularity (Fig.2), respectively, both suggesting invasive fungal infection (aspergillosis). He was started on amphotericin-B along with antibiotics; and chemotherapy was stopped. By day 21 he started showing improvement with gradual resolution of lung lesion and scab formation over the nasal cellulitis. Despite interrupted and partial therapy, he achieved hematological remission on day 25, however he was left with ugly sequel of invasive fungal infection. This was characterized by bony erosions as seen on follow up CECT of paranasal sinuses (Fig. 3), which manifested externally as perforation in lateral wall of the nose on right side and another perforation in the hard palate (Fig. 4, 5). These sites particularly the nasal area exuded foul smelling discharge creating obvious social problems. While his primary disease responded well and remained in remission, the sequel of fungal infection remained a matter of concern.

The incidence of invasive fungal infections is approximately 10-15% in acute leukemias and cause substantial morbidity and mortality. With the best of therapy and efforts, response rates are not more than 50% and many patients eventually succumb to this deadly infection.¹ The most common organisms are opportunistic moulds especially *Aspergillus* species and less commonly *Mucor*. Lungs and paranasal sinuses are the most common sites accounting for 80-90% of the cases. Radiological evaluation and serology for galactomannan help reach diagnosis, however only a positive culture is a definitive proof.^{1, 2} Therapy mostly includes either amphotericin-B or voriconazole, with newer agents kept for salvage.¹ Nevertheless, prevention as always score above cure especially in a disease like invasive fungal infection with the high mortality even with best available treatment.

References

1. O'Brien SN, Blijlevens NMA, Mahfouz TH, Anaissie EJ. Infections in Patients with Hematological Cancer: Recent Developments. *Hematology Am Soc Hematol Educ Program* 2003;438-72.
2. Segal BH, Walsh TJ. Current Approaches to Diagnosis and Treatment of Invasive Aspergillosis. *Am J Resp and Crit Car Med* 2006; 173:707-17.

*Associate Professor, **Senior resident, Department of Medical Oncology, IRCH, AIIMS, New Delhi; ***Associate Professor Radiodiagnosis, Department of Radio diagnosis, Dr BRA IRCH, AIIMS, New Delhi

Received: 13.02.2009; Revised : 09.09. 2009; Accepted: 10.09.2009