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Abstract (poster session)

Fibrillar - a novel antifungal delivery method: most unusual case of *Aspergillus fumigatus* empyema and bronchopleural fistulae after right-sided pneumonectomy, treated successfully by innovative salvage therapy

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Background: We present a most unusual and challenging case of *Aspergillus fumigatus*[AF] empyema and bronchopleural fistulae after right sided pneumonectomy. The topography and expanse of fungal growth within the chest cavity made drug delivery and sustained exposure to antifungal agent a challenge. Literature search/consultation with experts was of limited benefit. An innovative and novel antifungal delivery method was planned as a salvage to treat the infection. Case Study: A 52-year old gentleman, heavy smoker for 35 years, was hospitalised with chest symptoms and diagnosed with right upper lobe mass. He underwent an elective pneumonectomy. Histology showed well differentiated squamous cell carcinoma, T3N1M0. His postoperative period was complicated by development of a bronchopleural fistula. An Elossier flap (open stoma) was created to drain the space. This followed long term follow up review in outpatient clinic. In February 2010, review in clinic revealed the presence of thick layer of deposit with a green sheen visible through Elossier flap on the inner wall of chest cavity. Tissue samples for culture isolated pure growth of *Aspergillus fumigatus*. Systemic treatment with voriconazole did not clear the fungus. Salvage therapy was planned, discussed with patient and consent obtained. Access to inside of chest cavity through Elossier flap, debridement of thick layer of deposit and amphotericin powder insufflation to cover pleural surface. This was packed with Fibrillar [haemostat] to allow sustained exposure to amphotericin. The patient had four such procedures and systemic posaconazole 400mg q12h po was continued postoperatively. He made slow but good progress and increased some weight by April 2010. He was kept on long term posaconazole and follow up review in clinic. Culture of swabs were negative for fungus. Video of the procedure is available. Discussion: Fibrillar, an absorbable haemostat, conforms, adheres and melts into bleeding tissue. It has antibacterial properties. Body temperature, humidity, nutrients, oxygen and access to environment provided perfect conditions for fungal growth. Systemic antifungals failed to clear the fungus because of limited vascularity of the area. The topography and extensive spread of fungus along pleural surface of chest cavity presented a challenge for choice of delivery method, choice, dose, duration, sustained exposure to a suitable antifungal agent. The patient continues to be infection free and in good health.

