P-222

Pulmonary aspergilloma – a very rare complication after delayed sternal closure in a neonate

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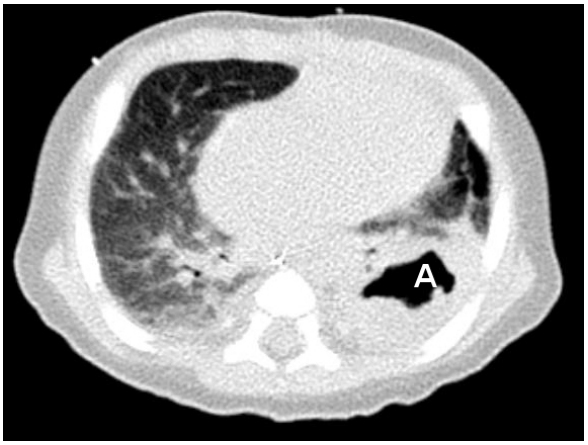
We report of a child with hypoplastic left heart syndrome (HLHS) after Norwood I procedure and invasive aspergillosis progressing to cavitary pulmonary aspergillosis.

Case report: The child was born at term after prenatal detection of HLHS with mitral and aortic atresia. The foramen ovale was severely restrictive with additional communication via an atypical interatrial venous network. Despite facial dysmorphism standard genetic tests were normal. The child underwent Norwood I procedure on day 5 of life with postoperative transthoracic venoarterial ECMO therapy for 3 days. Sternal closure was on day 6 post surgery. Due to rising inflammation markers and clinical signs of infection broad spectrum antibiotic treatment was initiated. Tracheal aspirate on day 11 after surgery grew aspergillus fumigatus with simultaneous positive galactomannan antigen. Treatment with voriconazole was initiated. 20 days after surgery a hyperlucent lesion on chest Xray evolved that was further characterized by CT as an aspergilloma of 2x3 cm of the left lower lobe (figure; A – aspergilloma). Follow-up imaging showed decreasing size of the lesion under longterm oral therapy with voriconazole. The child successfully underwent bidirectional Glenn at the age of 6 months and antifungal therapy was stopped one month thereafter. Eight months after discontinuation the child remains in stable clinical condition.



Discussion: Nosocomial infections are an increasing problem, including fungal infections. Although antifungal treatment was initiated in time, pneumonia evolved to pulmonary aspergilloma, which is very rare in infants. The contribution of transthoracic ECMO therapy with open chest for 6 days remains unclear. Usually single aspergillomas are treated surgically. In patients undergoing Fontan pathway an optimal pulmonary status is a prerexquisite. Since total or subtotal resection of a lung lobe was thought to put the child at a higher risk in the long run, we opted for longterm antifungal therapy. Optimal duration of antifungal therapy remains unclear and was stopped in our patient after six months of therapy after successful Glenn procedure.