Title: Video assisted thoracoscopic resection of pulmonary aspergilloma in children with cancer

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Body: Introduction: Pulmonary aspergilloma primarily affects severely immunocompromised patients. Overall its surgical treatment has been technically challenging and controversial mainly in the paediatric population where the situation still remains vague. Objective: To evaluate the clinical effectiveness and patient outcome of video assisted thoracic surgery (VATS) in children with pulmonary aspergilloma and cancer. Materials and methods: Retrospective study of all children with cancer that had a VATS resection of pulmonary aspergilloma in our centre. Thorough review of medical records, imaging and pathology tests and clinical follow up in the thoracic outpatients' clinic. All results were processed with SPSS v12.0. Results: Six children (3 females, 3 males) with mean age of 11.7 years (range 11-16) were diagnosed with pulmonary aspergilloma during 2009-2011 and had a VATS resection (wedge resection/segmentectomy). All children had a background medical history of active cancer as follows: 1/6 Hodgkin's disease, 2/6 acute lymphoblastic and 2/6 acute myeloblastic leukemia, 1/6 Ewing sarcoma. Tissue culture grew Aspergillus species (5/6) and Fusarium (1/6). No procedure-related complications were recorded. Mean hospital stay was 6.7 days. VATS resection combined with antifungals pre- and postoperatively was successful. Over a 12 month follow up patients showed no Aspergillus recurrence and 1/6 died due to his main sinister disease. Conclusions: VATS resection for pulmonary aspergilloma in children is a safe technique assuring clinical results equal to open thoracotomy yet being minimal invasive and adding less burden on the patient. It could be suggested as the procedure of choice in the immunocompromised paediatric population.