

**Treatment strategies for Pulmonary Sequestration in Childhood:
resection, embolization, observation?**

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Objective: The ideal treatment strategy for pulmonary sequestration in the pediatric population, whether resection or embolization, is not clearly defined. In our institution both therapies were performed depending on point of entry. The aim of this study was to assess the outcome of these different management strategies.

Methods: Retrospective, single centre review. Local pediatric and cardiology databases of our tertiary referral center were used to identify patients. The main inclusion criterion was the established diagnosis of a pulmonary sequestration. Patients (n=48) were divided into three groups based on treatment received: conservative management (n = 5), surgery (n = 22) and embolization (n = 21).

Results: Diagnosis was made by fetal ultrasound (n = 9), routine ultrasonography (n = 20), computerized tomography(CT) , mostly CT-angiography , (n = 18) or arteriography (n = 1). Respiratory symptoms, i.e. recurrent chest infection, were the most common clinical presentation in the surgical group, whilst cardiac failure was the most frequent symptom in the embolization group (p < 0.01; 95% CI: 0.3 to 0.9). The median age at treatment was 8.0 months (range: 1.2 – 166.0) in the surgical group, 4.0 months (range: 0.2 -166) in the embolization group and 8 mo (range: 0.3 – 197.0) in the conservatively managed group. There was no significant difference between the ages of the former two groups (p = 0.9). There were six complications in the surgical group and one in the treatment group (p = 0.1). Outcomes in both groups were comparable with good results on follow-up. Failure of embolization, due to the sharp angle of take-off of the vessel precluded safe coil placement in one patient. In this case a vascular clip was placed surgically on the anomalous vessel during cardiac surgery for the underlying cardiac lesion.

Conclusion: Both surgery and endovascular embolization are equally effective and safe treatments for pulmonary sequestration. The presenting symptoms dictates therapy: surgery in case of infection and embolization if a shunt needs to be abolished. Our institutional policy remains unchanged.