BIOCHEMICAL AND HISTOPATHOLOGICAL ANALYSIS OF CASTS FROM PLASTIC BRONCHITIS
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Plastic bronchitis is a rare cause of obstructive airway in patients who have undergone partially corrective surgery for congenital heart disease. The Fontan is the most frequently report procedure associated with plastic bronchitis. The airway obstruction is due to the formation of bronchial casts with rubber-like consistency develop in the tracheobronchial tree. The pathophysiology reported has suggested that high pulmonary venous pressures may lead to a lymphatic dysfunction and results in mucus production and cast formation. The bronchial casts can be exteriorized by coughing, bronchoscopy or surgery. The composition analysis of the cast has not been reported in the literature. The objective of this research is to analyze the biochemical composition of bronchial casts and its morphology. Casts were rinsed in sterile PBS. To determine the biochemical composition of the insoluble cast was submitted to acid hydrolysis (HCl, 2M, 4 hours, 90°C). The content of total polysaccharide was determined by the phenol-sulfuric acid method (Dubois et al., 1956) and the protein content was measured according to Bradford’s method (Bradford, 1976), using bovine serum albumin (BSA) as the standard. Casts for pathological assessment were fixed in buffered formalin were transferred to ethanol (70%) and placed in cassettes in preparation for paraffin embedding. The histologic sections were stained with hematoxylin and eosin. The results show the presence of proteins and carbohydrates in casts and histopathological analysis shows few cells, non-inflammatory (neutrophils). Casts may be divided into two types. Type I casts are inflammatory, consisting mainly of fibrin with cellular infiltrates, and occur in inflammatory diseases of the lung. Type II, or acellular casts, consist mainly of mucin with a few cells, and usually occur following surgery for congenital cardiac defects. With these preliminary findings we conclude that this cast is the non-inflammatory type.

Palavras chaves: Plastic bronchitis; Cast bronchitis composition; Histopathological analysis.