Supraventricular Arrythmias Following Thoracic Surgery For Bronchial Cancer: A Retrospective Analysis Of 250 Consecutive Thoracic Operations.

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Abstract

Concerns about cardiac dysrhythmias were a prominent issue during the early years of thoracic surgery. Since the first actual documentation of cardiac dysrhytmias after pulmonary resections in the early 1940s, there has been considerable interest in their incidence and nature, their predictability from preoperative assessment, the ability to prevent their development and their treatment[1].

According to the international literature, most dysrhythmias are supraventricular and by far the most common is atrial fibrillation. The pathophysiologic mechanisms are not well understood and various factors may occur such as hypoxemia, right ventricular dilatation and pulmonary hypertension. The most frequently reported risk factors are: extent of surgical resection, age, smoking, hypertension, diabetes mellitus and beta-blockers assumption[2].

Treatment of postoperative supraventricular arrhythmias after lung resection is still a controversial topic. Options differ whether supraventricular arrhythmias should be treated with b-blockers, calcium channel blockers or other antiarrhythmic drugs (amiodarone, ibutilide). Digoxin has traditionally been used for the prophylaxis of supraventricular arrhythmias after pneumonectomy but its efficacy remains unproven. Amiodarone (a class III antiarrhythmic drug) has been used after lung resection in a limited number of studies so far with controversial results [3,4].

Two hundred and fifty (250) patients undergoing resection surgery of the lung during last 3 years (2000-2003), were retrospectively reviewed in order to define prevalence, type, risk factors and to assess the efficacy of amiodarone as an antiarrhytmic drug. The patient's history of cardiovascular problems, hypertension, tobacco smoking and pharmacological assumption were carefully noted. Once onset of supraventricular arrhythmia was monitored or ECG documented, intravenous effusion of amiodarone was started with a loading dose of 5 mg/kg in 30 min and a maintenance dose of 15 mg/kg until remission of supraventricular arrhythmia.

Data are presented as mean +/- standard deviation, unless otherwise indicated. Continuous data were analyzed using independent Student's t-test when two sets were compared. Categorical data were analyzed using x2 analysis or Fisher's exact test (for data sets with one or more cells < or = 5). In all instances, p<0,05 was considered significant.

Forty seven episodes (47) of supraventricular arrhythmias, 41 of atrial fibrillation were identified (Table 1).

{image:1}

The incidence of supraventricular arrhythmias by surgical procedure and side of resection is shown in table 2.

{image:2}

The statistical significance of the extent of surgical resection and the side of resection are shown in tables 3,4,5 and 6.

{image:3}

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{image:6}

The significance of other factors are shown in table 7.

{image:7}

Rhythm disturbances were most likely to develop on the second postoperative day (38/47 patients, 80,8%). Sinus rhythm was achieved with amiodarone in 44/47 patients (93,6%) with no side effects. The remaining three patients received electrical cardioversion. One of them has never achieved sinus rhythm (chronic atrial fibrillation).

The present study confirms previous data that supraventricular arrhythmias are common in the postoperative period following thoracotomy for lung cancer. The results confirmed the great importance of extent of surgical resection and age as risk factors. Amiodarone is both safe and effective in establishing and maintaining sinus rhythm.

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