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A STUDY OF PNUEMONECTOMY PATIENTS IN TERTIARY CARE CENTRE - TIRUNELVELI

Clinical Research

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ABSTRACT

Aim of Study: To analyse The factors predisposing to Pneumonectomy in patient who have a non – functional, infected and destructed lung. **Material & Method :** Period of study january 2014 to December 2017 Venue: Department of Cardio thoracic surgery Tirunelveli Medical college Tirunelveli.

Study Population: 25 cases. Patient referred from thoracic –Medicine department were taken for this study. Pneumonectomy was done as the treatment modality for these 25 cases. X- Ray chest PAview, CT- Chest plain & contrast, fibre optic bronchos cope study – bronchial lavage, FNAC & Biopsy, Pus culture and sensitivity, sputum AFB were taken in account for diagnosis, treatment.

Conclusion: Neglected impacted foreign body in children main bronchus led to atelectasis, super added infection –pyothorax & Destroyed lung Carcinoma in early stage detected by endoscopy & biopsy helps to control the disease process by doing pnemonectomy. followed by Bacterial infection in children and adults leads to pyothorax & destroyed lung, if not properly treated earlier. Defaulter of ATT contributes to majority of cases of pnemonectony. super added bacterial injection prevails that leads to pyothrax & destructed lung

KEYWORDS

Pnemonectomy , Extrapleural Pneumonectomy,Tertiary Care Centre-Tirunelveli

BACKGROUND:

The lungs are essential for respiration, pH equilibrium, enzyme production, and host defense, The lungs are susceptible to a variety of diseases both malignant and benign, which sometimes may require complete resection of a lung as a life saving procedure. Extrapleural pneumonectomy is a procedure that includes resection of the parietal and visceral pleurae, diseased lung, ipsilateral hemi-diaphragm, ipsilateral pericardium, and mediastinal lymph nodes. Pnemonectomy procedure carries high risk of morbidity and mortality due to operative procedure itself as well as cardiac and pulmonary complications in the post operative period.This procedure is beneficial in patients with malignant mesothelioma and extensive thymomas. This approach is often combined with radiation and chemotherapy to improve survival . First extrapleural pneumonectomy was described by Sarot the in 1949, and it was initially used in the treatment of tuberculosis empyema but became more commonly used in the 1980s and 1990s in the treatment of mesothelioma. Pneumonectomy is indicated for both malignant and benign diseases.Indications for pneumonectomy for malignant diseases include the following: Secondary metastasis to the lung (uncommon) , Primary non-small cell lung carcinoma. Chronic lung infection such as multiple collections, bronchiectasis, complicate fungal infection like aspergillosos, fibrocavitary pulmonary tuberculosis, Traumatic lung injury, Bronchial obstruction with destroyed lung, Congenital lung disease are benign indications for pneumonectomy This study analyses the various indications of pnemeonectomy.

AIM: To analyse the predisposing factors that leads a non functional, infected and destructed lung resulting in Pnemonectomy .

MATERIAL AND METHODS : Period of study 3 yrs from 2014 to 2017.

Venue: Department of Cardio vascular and thoracic surgery.Study population: 25 patients referred from thoracic-Medicine department were taken for this study. Pneumonectomy was done as the treatment modality for these 25 cases. X- Ray chest PAview, CT- Chest plain & contrast, fibre optic bronchoscope study – bronchial lavage, FNAC & Biopsy, Pus culture and sensitivity, sputum AFB were taken in account for diagnosis, treatment. Pneumonectomy was done as the treatment modality for these 25 cases

RESULTS: In this there were 14 male patients and 9 female patients and 2 children. Seven patients underwent Pnemonectomy in 2014-15 and Nine patients in 2015 -16 as well as in 2016-17. Three patients were diagnosed to have carcinoma of left main bronchus. Bacterial infection leading to pyothorax and destroyed lung was the indication for Pnemonectomy in 8 patients. Destroyed lung due to overwhelming pulmonary tuberculosis due to Defaulted anti tuberculous therapy was the is the most common indication for for Pnemonectomy which amounts to 13 patients. Neglected foreign body, impacted in bronchus leading to atelectasis, lung infection & destruction of lung was the indication for Pnemonectomy in one pediatric age group.

DISCUSSION: Pulmonary function of the patient should be assessed and a ventilation-perfusion scan must be done for any patient with a forced expiratory volume in 1 second (FEV1) of < 2 L. The postoperative lung function can predicted by the combined results of these tests. Patients with a predicted FEV1 of less than 0.8 L are often treated with options other than peumonectomy. Although surgeons preference for extrapleural pneumonectomy is based on pulmonary function studies, patients should be individualized and performance status taken into account for resection.

To evaluate for valvular disease, pulmonary hypertension, and ventricular function echocardiography should also be performed before the procedure. The presence of Severe valvular disease, severe pulmonary hypertension, and poor ventricular function may be considered as contraindication for surgery. In order to assess the extent of disease involvement Positron emission tomography and CT scanning of the chest are considered usually In patients with disease extending past the diaphragm to be intra-abdominal, to the contralateral hemithorax, invading into structures of the mediastinum or, most commonly, invading the ribs pnomonectomy is contraindicated . The chest wall invasion is assessed intraoperatively since chest MRI and CT scanning are not always reliable unreliable. Complications of pneumonectomy and extrapleural pneumonectomy that are likely to occur include herniation of heart chamber, Fibrillation of Atrium, Cardiac tamponade , Dehisence of Diaphramatic patch, venous thrombosis, Bronchopleural fistula, Pulmonaryembolism, pulmonary infections and pulmonary edema, Insufficiency of respiratory system, Acute Myocardial infarction , internal Bleeding, Wound infection, Urinary tract infection, Postpneumonectomy syndrome ,Empyema thorax. A incision of posterolateral thoracotomy over the fifth or fourth intercostal space for additional access is used with resection of the rib. In the case of an extrapleural pneumonectomy for resurgery the following procedure is done. Main focus is aimed at division of the pulmonary vessels and bronchus and the superior pulmonary vein and inferior pulmonary veins are identified , isolated and stapled. Some instances they are to be clamped and oversewn., a stapler is usually used to divide the vessel after isolating the right main pulmonary artery although some Cardio thoracic surgeons prefer

clamping and oversewing.The right bronchus mains stem is identified and isolated. then it is divided near the carina with a stapler. In case of malignant disease involving the lung, a standard lymph node dissection is conducted.In our study 14male patients and 9 female patients and 2 children undergone pnemonectomy due to various indication . Seven patients underwent Pnemonectomy in 2014-15 and Nine patients in 2015 -16 and another 9 pateints in 2016-17. Carcinoma of left main bronchus was the indication for pnemonectomy in Three patients diagnosed by imaging studies and broncoscopy with biopsy . Bacterial infection leading to pyothorax and destroyed lung was the indication for Pnemonectomy in 8 patients . Destroyed lung due to overwhelming pulmonary tuberculosis due to Defaulted anti tuberculous therapy was the most common indication for for Pnemonectomy which amounts to 13 patients. Neglected foreign body with impaction in bronchus leading to collapse, atelectasis leading on to lung infection & destruction of lung was the indication for Pnemonectomy in one patient of pediatric age group

TABLE:1 Patients underwent Pnemonectomy

S.No	Year	Male	Female	Children upto 12 yrs
1.	2014-15	4	2	1
2.	2015-2016	5	4	-
3.	2016-2017	5	3	1
	Total	14	9	2

TABLE:2.Statistical Data for disease process for which pnemonectony was done

S.No	Diagnosis	Male	Female	Children
1.	carcinoma (lt) main bronchus	2	1	-
2.	Bacterial infection leading to pyothorax and destroyed lung	5	2	1
3.	Defaulter of ATT destroyed lung	8	5	-
4.	Neglected foreign body, impacted in bronchus leading to atelectasis, lung infection & destruction			1

CONCLUSION:

Neglected impacted foreign body in children in the main bronchus lead to atelectasis, super added infection –pyothorax and destroyed lung . This condition should be recognized early. Carcinoma in early stage should be detected by endoscopy & biopsy in order to control the disease process by pnemonectomy . Bacterial infection in children and adults leads to pyothorax & destroyed lung, if not treated adequately in appropriate time will lead to pnemonectomy. Defaulter of ATT contributes to majority of cases of pnemonectony with super added bacterial injection leads to pyothrax & destructed lung and strict adherence to anti tuberculous therapy should be monitored

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