ORIGINAL ARTICLE

Pattern of Thoracic Surgical Diseases at a Tertiary Care Hospital

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ABSTRACT

Objective	To describe the pattern of thoracic surgical diseases at a tertiary care hospital.
Study design	Descriptive case series.
Place & Duration of study	Department of Thoracic Surgery, Ojha Institute of Chest Diseases, Dow University of Health Sciences Karachi, from January 2013 to December 2014.
Methodology	Records of all the patients admitted, transferred to or referred from other departments / hospital during the study period was retrieved and analyzed. Variables studied included mode of admissions, diagnosis, surgical procedures performed and mortality. Descriptive statistics were used for data presentation.
Results	A total of 669 patients were admitted during the study period. There were 382 (57%) males and 287 (43%) females. A total of 626 surgical procedures were performed. Out of these 254 (41%) were carried out under general anesthesia and 372 (59%) in local anesthesia. The most common procedure under general anesthesia was decortication (n=51, 20%). Most common procedure under local anesthesia was tube thoracostomy (n=119, 32%). The remaining 43 patients were managed conservatively. The overall mortality was 1.8%.
Conclusion	Empyema thoracis was the commonest thoracic surgical condition for which patients were admitted.

Key words Surgical audit, Chest surgery, Thoracic surgical diseases, Thoracotomy.

INTRODUCTION:

An audit of clinical practice is the analysis of data either prospectively or retrospectively to determine both quantitatively and qualitatively, the work load of an institution or individual department. It includes numbers of admissions, patients demographics, various complications and mortality.[1] The society of Cardiothoracic Surgeons of Great Britain and Ireland was the first professional body to coordinate national data collection in the United Kingdom with the introduction of United Kingdom Thoracic Surgical Register in 1976 and the cardiac surgical Register in 1977.[2] Periodic clinical or surgical audits provide quantitative analysis of various surgical procedures and identify risk factors for morbidity and mortality.[3] It provides a valuable guideline for the better patient management. It evaluates the prescribed healthcare standards and uses data to guide policy makers in planning future strategies.[4] It also enables us to identify patterns and trends in our practice by observing changes in case load, procedures performed and overall mortality.[5]

The Ojha Institute of Chest Diseases is a 300-bed tertiary care teaching facility and associated with Dow University of Health Sciences. It provides medical and surgical care to the patients with pulmonary diseases. The Department of Thoracic Surgery is a 22 bed ward including a 6-bed intensive care unit with an operation theatre and bronchoscopy suite. OPDs are conducted twice a week and the operation theatre runs four times a week.

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In the city of Karachi thoracic surgical departments are not functional. The load of patients with chest diseases is huge as tuberculosis and smoking are prevalent. Healthcare facilities are not available to people at affordable cost. The scenario is even worse in interior of province of Sindh and Baluchistan from where large number of patients are referred. This indicates a need to analyze pattern of thoracic surgical diseases in Pakistani perspective especially from southern part of the country from a tertiary care set up.

METHODOLOGY:

This descriptive case series was conducted at Department of Thoracic Surgery, Ojha Institute of Chest Diseases, Dow University of Health Sciences Karachi, from January 2013 to December 2014. All patients who were attended in OPD and admitted, referred, or transferred from other wards and hospitals were included in this study. Data was obtained from the hospital medical records. This included records of OPD, ward and operation theatre. Registers are also maintained by the department as well.

A data collection form was developed to obtain the required information regarding patients' demography, investigations carried out, diagnosis made, treatment given and the clinical outcome. Type of surgical procedures performed, anesthesia used, and mortality were also recorded. Data was analyzed on the computer using SPSS Version-20. Results were presented as frequencies and percentages using descriptive statistics.

RESULTS:

In 2013, a total number of 1059 patients were seen in OPD and 312 patients were admitted in the ward. Of these 249 (80%) were admitted through the OPDs, 13 (4%) were transferred from other wards and 50 (16%) were referred from other hospitals. There were 172 (55%) male and 140 (45%) female patients. Mean age of patients was 24 year (range 8 year -70 year). A total of 295 surgical procedures were performed. Of these 115 (39%) were done under general anesthesia and 180 (61%) under local anesthesia.

Table I: Pattern of Thoracic Surgical Diseases

Diseases	Year 2013	Year 2014
Aspergilloma	12 (3.8%)	16 (4.4%)
Bronchiectasis	19 (6%)	13 (3.6%)
Bronchogenic cyst	1 (0.3%)	0 (0%)
Cold abscess	23 (7.3%)	25 (7%)
Cervical TB lymphadenitis	27 (8.6%)	31 (8.6%)
Chest wall tumor	21 (6.7%	19 (5.3%)
Diaphragm eventration	0 (0%)	2 (0.5%)
Empyema Thoracis	42 (13.4%)	56 (15.6%)
Empyema necessitatis	3 (0.9%)	1 (0.2%)
Emphysematous bulla	1 (0.3%)	3 (0.8%)
Hydatid cyst	20 (6.4%)	26 (7.2%)
Lipoma	13 (4.1%)	8 (2.2%)
Lung abscess	18 (5.7%)	12 (3.3%)
Lymphoma	24 (7.6%)	29 (8.1%)
Mediastinal tumor	17 (5.4%)	21 (5.8%)
Metastatic lung carcinoma	9 (2.8%)	13 (3.6%)
Pneumothorax with persistent air leak	27 (8.6%)	35 (9.8%)
Primary lung carcinoma	26 (8.3%)	33 (9.1%)
Sebaceous cyst	9 (2.8%)	13 (3.6%)
Total	312	357

In 2014, a total number of 1736 patients were seen in OPD and 357 patients were admitted. This included 278 (78%) elective admissions through OPD and 33 (9%) transferred cases from other wards. A total of 46 (13%) patients were referred from other hospitals. There were 210 (59%) males and 147 (41%) females. Mean age of the patients was 27 year (range 18 year -71 year). A total of 331surgical procedures were performed. This included 139(42%) under general and 192 (58%) under local anesthesia.

The most common procedure under general anesthesia was thoracotomy and decortications (n=51 - 20%). Other common procedures included hydatid cyst enucleation in 34 patients (13.3%) and cold abscess excision with rib resection in 44 patients (17%). The most common procedure under local anesthesia was tube thoracostomy in 119 (32%) patients. Other common procedures under local anesthesia were bronchoscopy in 105 (29%) and cervical lymph node biopsies in 66 (18%) patients. Details are given in table I and II. The 2-year mortality rate was 1.8% (6 expired in 2013 and 7 in 2014).

DISCUSSION:

It is important to frequently analyze the pattern of diseases and their outcome. There must be a critical review of performance at various levels as it forms the cornerstone of professional development.[6,7] The benefits of audits are manifold. It helps physicians correct their deficiencies and increase departmental performance. It identifies the increasing importance of a particular field and the rising number of patients who need specialized care.[8,9] Audits can help reduce the length of hospital stay, postoperative pain and loss of quality of life.[10] It also assists surgeons to evaluate their practice and compare themselves with evidence-based national guidelines, predicts surgical morbidity and mortality as well as provide meaningful information regarding surgical outcomes.[11]

In a large multicenter study from Europe, data was gathered from all major and minor hospitals across Britain and the authors showed that a total of 81,231 patients were seen for thoracic surgery related complaints.[9] There were 598 mediastinal tumors and 454 chest wall tumors resected across all hospitals combined in three years in Britain and Ireland. At our department a total of 2795 patients were seen in OPD and 669 patients underwent major or minor surgeries during the span of two years. Our study included data from one hospital only and we had 24 surgeries for mediastinal tumor and 30 surgeries for chest wall tumor excision. In the former study 5456 bronchoscopies were performed in three years while 105 bronchoscopies were performed in our unit. A study conducted from Peshawar showed that the most common procedure performed was

Table II: Details of Surgical Procedures Performed

Procedure	Year 2013	Year 2014
Bullectomy	1 (0.3%)	1 (0.3%)
Blebectomy and parietal pleurectomy	7 (2.3%)	9 (2.7%)
Bronchoscopy	44 (14.9%)	61 (18.5%)
Chest wall tumor excision and chest wall reconstruction	16 (4.4%)	14 (4.2%)
Cold abscess excision with rib resection	23 (7.7%)	21 (6.3%)
Cervical lymph node biopsy	31 (10.5%)	35 (11%)
Diaphragm plication	0 (0%)	2 (0.6%)
Decortication	29 (9.8%)	22 (6.6%)
Hydatid cyst enucleation	14 (4.7%)	20 (6%)
Lobectomy	4 (1.3%)	4 (1.2%)
Mediastinal tumor excision	13 (4.4%)	11 (3.3%)
Pleural biopsy	3 (1.1%)	5 (1.5%)
Pneumonectomy	1 (0.3%)	1 (0.2%)
Tube thoracostomy	109 (37%)	125 (38%)
Total	295	331

showing that 20% of our patients underwent decortication making it the most commonly performed surgery. Tube thoracostomies were the most common minor procedure done in our setup.

Brunelli et al conducted an audit at the Department of Thoracic Surgery to determine the mortality and morbidity of admitted patients and concluded that the department's performance was worse than expected.[13] Overall mortality in thoracic surgery has been reported as 2.5 to 4% in many studies.[14,15] We also calculated the 2 year morbidity and mortality of our department and concluded that mortality remained constant at 1.8% for both years.

CONCLUSIONS:

Empyema thoracis was the most common surgical pathology and decortication was the commonest procedure performed under GA. Mortality was 1.8%.

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