LUNG CANCER:
I. PRESENTING CLINICAL FEATURES

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INTRODUCTION

LUNG CANCER as a disease entity has changed dramatically over the last five decades; from being an unusual form of pulmonary disease it is now one of the most common and lethal forms of malignancy. Diagnosis usually follows symptoms which are seen relatively late in the natural history of the disease, and the prognosis of the individual patient often hinges on the symptoms, signs and radiological features seen at the time of presentation and diagnosis. We report our experience with regards to the presenting clinical features of lung cancer together with a review of the relevant literature on their significance. The overall features of lung cancer as a problem in Malaysia are being published separately.

MATERIAL AND METHODS

Data was obtained by analysis of the case records of patients diagnosed to have lung cancer at the University Hospital, Kuala Lumpur. Three hundred and eighty eight cases were seen during the years 1967 — 1976 and the diagnosis was based on two criteria: (i) clinical and radiological in 110 cases (28% of the total) and (ii) histological confirmation in addition in 278 cases (72%).

Symptoms encountered were classified into three clinical symptomatic groups as described by Feinstein (1966, 1968): (i) primary symptoms due to the local effects of the tumour e.g. cough, haemoptysis (ii) systemic symptoms, remote from the primary site and unrelated to metastases e.g. aesthenia, weight loss and (iii) metastatic symptoms, including those representing spread beyond the primary site e.g. dysphagia, cutaneous nodules, cord compression etc.

The anatomic extent of the disease was classified as described by the American Joint Committee for Cancer Staging and End Results Reporting (1974) into stages I, II and III.

RESULTS

Figure 1 shows the incidence of the classes of symptoms in the patients. Twenty seven per cent presented solely with primary symptoms and 37% with symptoms both primary and systemic in origin. Features related to metastases were seen in a total of 34% and 10% had all three classes of symptoms. Four per cent presented solely with features attributable to metastasis and 2% with those due to systemic effects without metastasis.

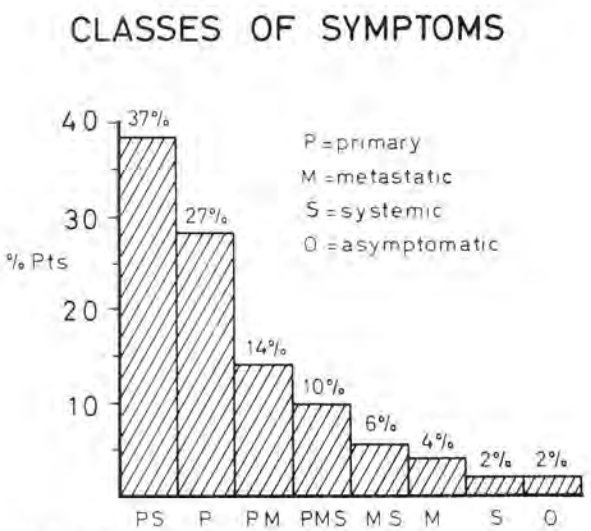

Fig. 1. Each column represents that percentage of patients presenting solely with the class or classes as indicated, to the exclusion of others.

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The individual clinical features and their frequency are shown in Table I. Two per cent were asymptomatic at presentation. The commoner primary symptoms were cough (68%) weight loss (47%), haemoptysis (35%) dyspnoea (30%) and chest pain (19%). Evidence of local and regional lymphatic spread was seen chiefly as mediastinal involvement in the form of hoarseness and evidence of vocal cord palsy (10%), SVC obstruction (9%) and dysphagia (5%). Two per cent presented as a Pancoast tumour. Of the metastatic features representative of distant spread, bone pain suggesting metastasis was the commonest, being seen in 8% at the time of presentation. Secondaries were sometimes noticed by patients in the form of swellings or lumps (6%); these were seen in the chest wall, along bones, in the supraclavicular, cervical, and axillary nodes and in the skin. Metastatic neurological involvement occurred chiefly as intracranial lesions in 7% including 5% with hemi or monoplegia and in the form of cord compression (2%).

Table I

Presenting Clinical Features

	Features	% Patients
I	No symptoms	2
II	Primary symptoms	88
	Cough	68
	Haemoptysis	35
	Dyspnoea	30
	Chest pain	19
III	Systemic symptoms	55
	Weight loss	47
	General: anorexia, malaise, lethargy	9
	Fever	5
	Osteoarthropathy	1
	Neuropathy/myopathy	1
IV	Metastatic symptoms	34
	(a) Features of local and regional lymphatic spread	
	Hoarseness, huskiness	10
	SVC	9
	Dysphagia	5
	Dysphagia	5
	Pancoast tumour	2
	(b) Metastatic features	
	Bone pains	8
	Intracranial space occupying lesions (including hemiplegia, monoplegia)	7
	Swellings/lumps	6
	Hemiplegia or monoplegia	5
	Cord compression	2
	Cerebellar	0.5

Systemic manifestations occurred in 55% of patients, weight loss being the most common feature seen in 47%. The other significant features in this group were general manifestations unrelated directly to metastases like anorexia, malaise and lethargy seen in 9% and fever (5%). Endocrine manifestations were not specially investigated for in most patients.

The duration of symptoms is set out in Figure 2. Thirty nine per cent had symptoms lasting under three months, 71% under six months and 86% under twelve months. The mean duration of symptoms in the total groups of patient was 5.1 months.

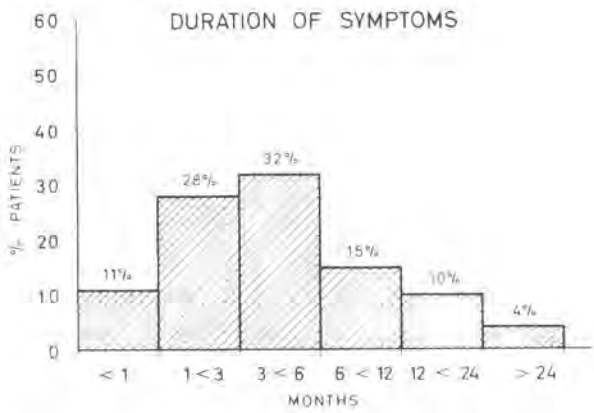

Fig. 2. Duration of Symptoms

Figure 3 shows the anatomic staging of the disease in the patients. Eighty seven per cent had stage III (generally non-resectable disease). There was no obvious correlation between the duration of symptoms and the anatomical staging and the mean duration of symptoms in the three anatomically staged groups were as follows: Stage I: 6.4 months, Stage II: 3.9 months and Stage III: 5.1 months.

At least 19% of the patients were initially clinically considered to have terminal disease as judged by severe weight loss and cachexia, weakness and poor performance status. Ten per cent were too ill to be discharged from hospital and died during their initial admission here within periods ranging from less than 24 hours to a few weeks. Of the non-histologically proven group 27% were either too ill for invasive investi-

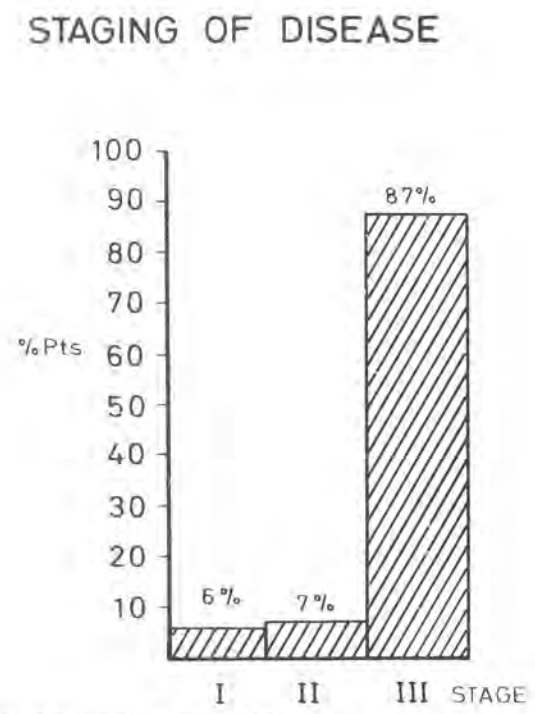

Fig. 3. Anatomic Staging of Disease

gations or died before investigations could be completed.

Radiological features: Details of the radiological abnormalities seen are shown in Table II. The commonest radiological abnormalities were a mass lesion/consolidation with or without atelectasis (56%) followed by hilar mass (36%) and pleural effusion (30%). Associated changes in addition to the lesions in the lung fields indicative of disease spread where most commonly in the form of bony lesions (13%), mediastinal involvement (9%) and diaphragmatic palsy (3%). The right lung was more commonly the site of the lesion (60%) and in 2% the lesion could not be lateralised. In both sides the upper lobes were the more commonly involved sites.

Table II

Radiological Features

Features	% Patients
No change	1
Collapse/mass/consolidation	56
Hilar mass	36
Pleural effusion	30
Associated bone lesions	13
Mediastinal changes	9
Non-specific infiltration	7
Diffuse/bilateral shadows	5
Cavitating lesions	3
Coin lesions	2
Elevation of diaphragm (with other lesion	2
Side of lesion: Right	60
Left	38
Indeterminable	2

DISCUSSION

The prognosis of lung cancer has tended to be based solely on its anatomic extent and cell type. Assessments based on the anatomic extent of the disease do not take into account its effects on systems that have not been actively invaded. Tumours are often erroneously labelled "early" and "late" based on their anatomic extents and morphological characteristics whereas by the time a tumour is visible radiologically it has already passed through 80% of its life span, is not curable by resection in over 90% of the cases, and is therefore actually detected late in its course (Rhodes *et al.*, 1973). Feinstein (1966, 1968) pointed out the significance of the symptomatology as the function of the cancer and its effects on the patient. He grouped patients into the three clinical (symptomatic) classes as opposed to their anatomic groups (I, II and III based on the extent of disease) and found good correlation between their clinical group and survival rates. For each anatomic group the survival rates were best for asymptomatic patients followed by those with primary symptoms, and worst for those with symptoms representative of metastasis. Also, patients with primary symptoms of longer duration survived longer than those in the "early discovery group" with a short history. This was explained by the fact that while primary symptoms of short duration were of doubtful significance, those of long duration indicated a slow growing tumour with little systemic or metastatic effects. He concluded that data supplying information about both the anatomic and clinical groups would be more meaningful in general and especially so in studies involving cancer therapy involving survival periods.

These findings have been supported by the work of others (Johnson and Smith, 1971; Green *et al.*, 1971; Hyde *et al.*, 1973 and Lanzotti *et al.*, 1977). Asymptomatic patients have the best prognosis (Johnson and Smith, 1971; Green *et al.*, 1971 and Senior and Adamson, 1970). Johnson and Smith (1971) observed in addition that marked weight loss was a very important factor even in the absence of metastasis. Green *et al.*, (1971) found the presence of primary and general features to be more favourable in terms of survival than those attributable to metastasis. The most significant prognostic findings within each stage of tumour spread in their series were age, histology, dyspnoea, acute pneumonia, anorexia, aesthenia and weight loss. Duration did not appear to exert any significant influence on the prognosis. Lanzotti *et al.* (1977) graded the symptom status of their patients with inoperable lung cancer into five classes ranging from asymptomatic to totally bed ridden. In their patients with limited disease, weight loss was the major prognosticator followed by symptom status, presence of supraclavicular metastasis and age. In patients with extensive disease, symptom status and age were the dominant factors followed by weight loss and metastasis. Histological type appeared relatively unimportant in their groups. Hyde *et al.* (1973) thought the "performance status" (general condition) to be of importance along with the extent of disease and cell type in influencing the survival. The clinical features and symptomatology as shown by the above studies provide some direct evidence of the duration of disease and prognostic information relating to survival, and to staging of disease especially with regard to operability.

The clinical features manifested are determined by the biological behaviour of the tumour and this often varies with the histological type. Squamous carcinoma tends to have a slow growth rate, and this is reflected in the symptomatology. These patients have symptoms chiefly referable to local growth and to regional extension, distant metastasis being late. Radiologically 40 — 60% have a perihilar mass, 25 — 30% a single peripheral nodule often large (66% more than 4 cm and 30% more than 8 cm in size) and 8 — 10% show cavitation (Byrd *et al.* 1978). Large cell carcinoma tends to resemble the squamous type in its behaviour (Byrd *et al.* 1968). The natural history of small cell carcinoma on the other hand is compressed into a shorter clinical phase with early metastasis and early extensive involvement of the mediastinal nodes. At presentation, there is involvement of the bone marrow and liver in 45% and 50% respectively (Hansen *et al.*, 1972) and of the brain in 8% (Newman *et al.*, 1973). It presents most often as a perihilar mass in 60 — 75% and even when seen as a peripheral lesion there is hilar lymphadenopathy in 33% (Byrd *et al.*, 1968). Adenocarcinoma is frequently asymptomatic at the time of discovery but in the symptomatic cases, features of local extension especially involving the pleura are prominent and dissemination occurs early. Sixty to seventh per cent are located peripherally and pleural effusion occurs in about 10% (Byrd *et al.*, 1969).

Our patients have been seen at advanced stages of their disease with a relatively poor prognosis as judged by clinical presentation and symptomatology, radiology, anatomic staging and low operability rates (11%). In the 2% who were asymptomatic half were operable cases, a finding in keeping with the relatively favourable prognosis in asymptomatic patients. As in most series (Hyde and Hyde, 1974) cough, weight loss, haemoptysis, dyspnoea and chest pain have been the most prominent symptoms. There was however a high incidence of SVC obstruction, hoarseness, dysphagia, intracranial involvement and other metastatic lesions. Cord compression was also probably relatively more common being seen in 2% at presentation, often as the main problem.

One per cent of patients had a normal chest radiograph at presentation and only 2% presented with coin lesions which are generally associated with a higher resectability rate (Hyde *et al.*, 1973). This may be on account of later presentation in our patients and because small lesions had been missed or overlooked earlier as was evident in some cases. Tala (1967) found in resected surgical specimens that only an extremely small number of peripheral lesions one centimetre or less in diameter were detected radiologically. A hilar mass and pleural effusion were common findings in our series as were large mass lesions. Patients with these radiological features usually have a poorer prognosis than those with smaller lesions and lesions in the mid lung (Brewer, 1977).

Follow up information on our patients has been very poor and we are unable to correlate the presenting symptomatology and findings with survival. It is clear in our experience however that most patients are being seen at advanced stages of their disease even by clinical standards.

SUMMARY

The presenting features of 388 patients with lung cancer seen over a ten year period at the University Hospital are discussed together with the implication of the different classes of symptoms and features. The influence of the symptomatology on the prognosis and survival is re-emphasised and the relevant literature reviewed. From our experience, we feel that: (i) earlier and more aggressive investigation appears warranted in suspicious lung lesions. Some patients had been treated on radiological grounds alone as tuberculosis or other infection. (ii) Where facilities for proper investigations and management are unavailable, patients with suspected lung cancer ought to be referred to appropriate centres as early as possible. Many of our patients were already in terminal states when first seen at this centre.

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