

## Age and sex incidence of hypopharyngeal tumours in Upper Egypt: Assuit University experience

EZZAT M. SALEH, M.D., AHMED A. ABDULLWAHAB, M.D., MOHAMMED M. KAMMAL, M.D.

### Abstract

Three hundred and seventeen patients with hypopharyngeal tumours presented at Assuit University Hospital and were studied retrospectively with regard to sex and age incidence. Postcricoid tumours form the majority (50.1 per cent) followed by pyriform fossa tumours (26.5 per cent) and finally posterior pharyngeal wall tumours (23.4 per cent). Men form the majority (211 out of 317, i.e. 69.7 per cent). The age incidence shows two peaks at 31-35 years and 56-60 years. The first peak is formed mainly of women while the second peak is formed mainly of men.

**Key words:** Hypopharyngeal neoplasms; Age factors; Egypt

### Introduction

Anatomically the hypopharynx includes the pyriform sinuses, the postcricoid region and the posterior pharyngeal wall. Cancers in this region are among the most lethal of head and neck tumours (Zagars and Norante, 1987).

Stell and Swift (1987) reported that undoubtedly there are geographical variations of the hypopharyngeal tumours. In the UK, in most series of patients approximately one-half arise in the pyriform fossa and the other half from the remaining sites, tumours of posterior pharyngeal wall being very uncommon (Dalley, 1968; Stell and Swift, 1987). On the other hand, in Canada and the USA the incidence of pyriform fossa tumour is much higher. In these series the incidence of carcinoma is much higher in men than women.

This study was aimed at reporting the experiences of the ENT Department at Assuit University Hospital which draws patients from most provinces of Upper Egypt having hypopharyngeal tumours and also trying to correlate this cancer with the different age groups.

### Material and method

The medical records of all patients with hypopharyngeal tumours from January 1982 to January 1994 were reviewed. This included 407 patients who were diagnosed as having hypopharyngeal cancer and who underwent endoscopic examination under general anaesthesia. The age, sex and site of involvement (postcricoid, pyriform fossa and posterior pharyngeal) were recorded. Ninety patients were excluded

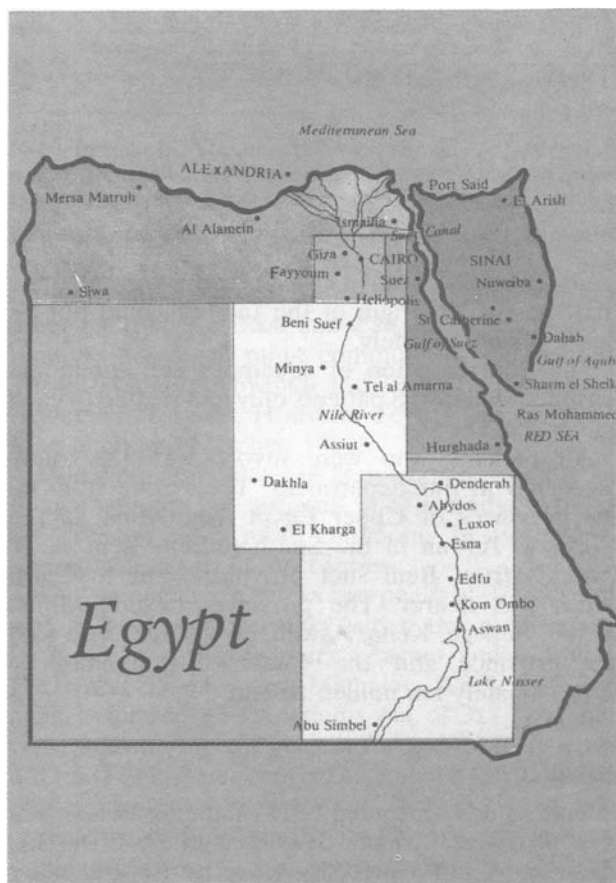


FIG. 1  
Map of Upper Egypt.

From the Department of Otolaryngology, College of Medicine, Assuit University, Assuit, Egypt.  
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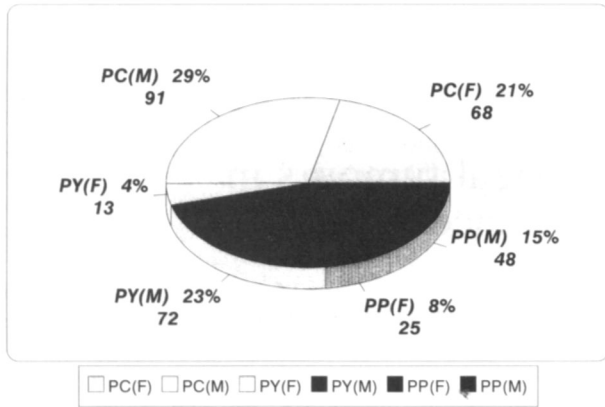


FIG. 2

Number of women (F) and men (M) with tumours at different sites of origin. PC = Postcricoid; PY = Pyriform fossa; PP = Posterior pharyngeal wall.

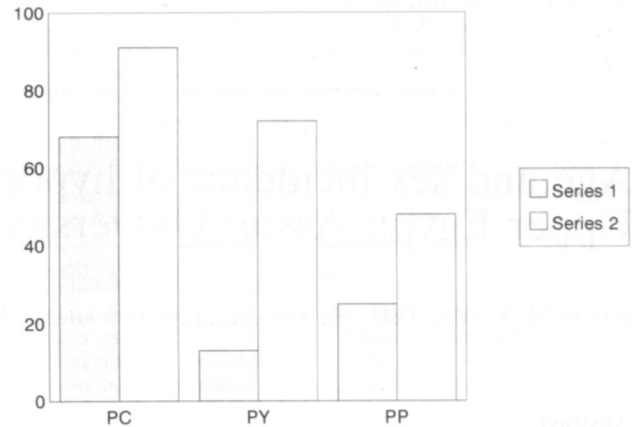


FIG. 3

Histogram showing darker bars (women) number and lighter bars (men) number of different sites of origin of hypopharyngeal tumours. PC = Postcricoid; PY = Pyriform fossa; PP = Posterior pharyngeal wall.

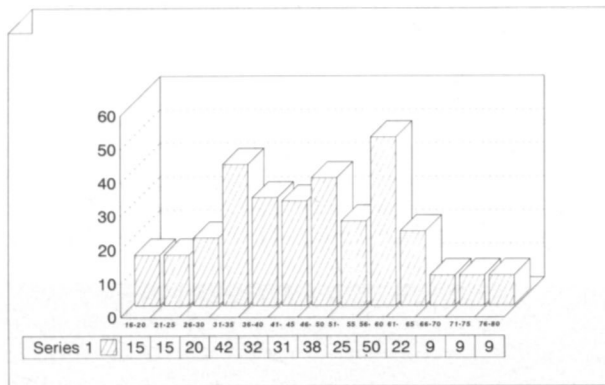


FIG. 4

Histogram shows number of patients including both sex in different age groups. This demonstrates the obvious peaks at 31–35 years and 56–60 years.

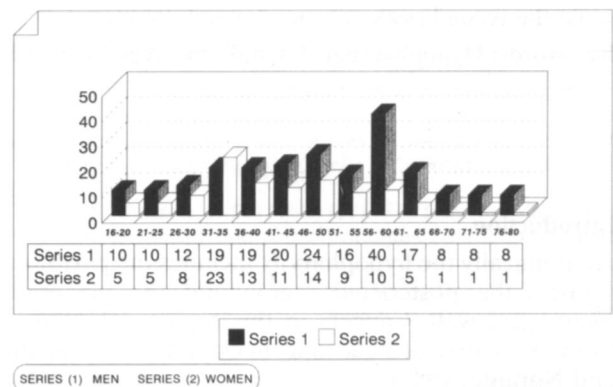


FIG. 5

Histogram shows number of each sex at different age groups. This demonstrates the peak at 31–35 is mainly formed of women and the other peak is formed mainly from men.

from the study because of extensive involvement so that the site of origin of the tumour could not be determined accurately.

The differentiation of squamous cell carcinoma was recorded in 108 patients only and related to each age group.

All patients who were involved in this study presented at our department. They came from all the provinces of Upper Egypt from Minia in the North to Aswan in the South (except Beni suef). Patients from Beni suef province went to Cairo which was nearer. The provinces include Minia, Assuit, Sohage, Kena, Aswan, New Valley and Red sea province and the combined population is approximately ten million (Figure 1).

**Results**

This study included 317 patients who had hypopharyngeal cancer diagnosed in ENT Department at Assuit University Hospital from January 1982 to January 1994. The postcricoid area was found to be the site of origin in 159 patients (50.1 per cent). Men were found to be more affected than women (91 versus 68). The pyriform fossa were found to be the site of origin in only 85 patients (26.5

per cent). Again men were affected more commonly than women (72 versus 13). The posterior pharyngeal wall was the site of origin in 73 patients (23.4 per cent). Figure 2 shows the number of patients with hypopharyngeal tumours at different sites of origin. Figure 3 shows the sex incidence at each site of origin. The age incidence (Figure 4) shows two peaks at 31–35 years and 56–60 years age. The older age group is more affected. Women mainly form the peak at 31–35 years while men mainly form the peak at 56–60 years (Figure 5). Women with postcricoid cancer peak at 31–35 years. Men with postcricoid tumours show no definite peak in spite of a broad increase in incidence from 36 to 60 years (Figure 6). Men with pyriform fossa tumours show peak incidence at 56–60 years while women show no definite peak in relation to age (Figure 7). Men with posterior pharyngeal wall tumours show two peaks at the same two age groups (31–36 and 56–60 years), while women show only one peak at the younger age group 31–35 years (see Figure 8).

There was no significant difference between the degree of differentiation of squamous cell carcinoma. This was in spite of finding that poorly differentiated squamous cell carcinoma did not affect the extremes of age (less than 36 and more

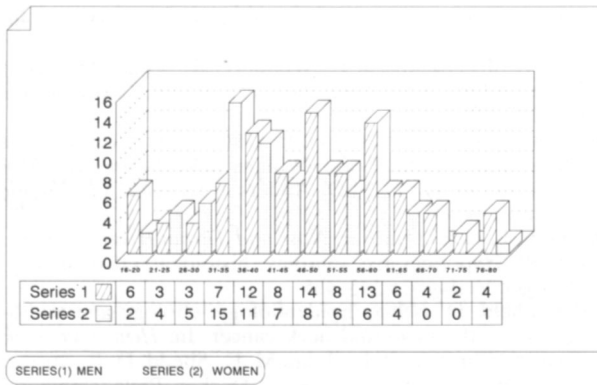


FIG. 6

Histogram shows patients with postcricoid cancer at different age groups and each sex. This shows women peak at 31–35 years while men has broad peak from 36–60 years.

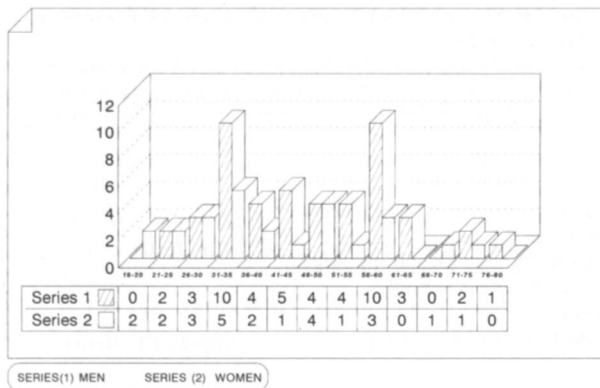


FIG. 8

Histogram shows patients with posterior pharyngeal tumours at different age groups. This demonstrates also the two peaks at 31–35 years and 56–60 years.

than 70; see Figure 9). On the other hand both moderately and well differentiated squamous cell carcinoma affected all age groups. The first peak is common to both types (36–40 years) and the second peak (51–55 years) for well differentiated only while a third peak (56–60 years) is for moderately differentiated only (Figure 8).

**Discussion**

This study demonstrates the geographical variations mentioned by Stell and Swift (1987). They noted that often the tumour is so advanced when first seen that it is difficult to determine its site of origin, and placing it in a particular site category is often a matter of guesswork. In this study, advanced lesions for which it was difficult to determine the site of origin were excluded (90 patients).

In this study postcricoid tumours form more than half the hypopharyngeal tumours (195 out of 317, i.e. 50.1 per cent) and these were the most common type of all hypopharyngeal tumours. On the contrary, in the UK and in the USA pyriform tumours were the most common. At the Royal Marsden Hospital, London (Dalley, 1968) and in Liverpool (Stell and Swift, 1987) pyriform fossa tumours formed 39 and 38 per cent respectively of the hypopharyngeal

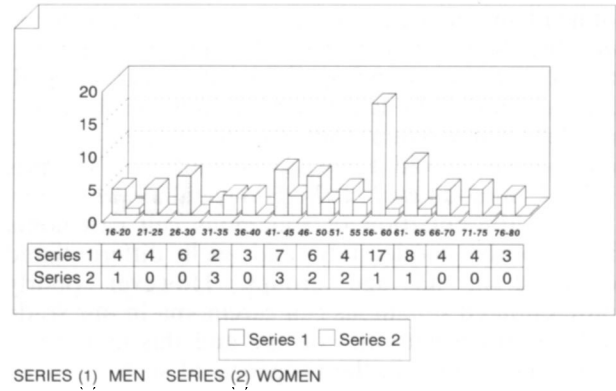


FIG. 7

Histogram shows patients with pyriform fossa tumours at different age groups. This shows only one peak at 56–60 with men.

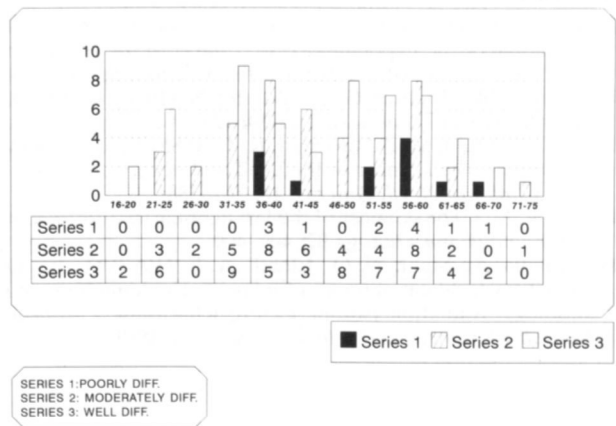


FIG. 9

Histogram shows differentiation of squamous cell carcinoma at different age groups.

tumours. In this study the pyriform fossa tumours were less common than postcricoid tumours and form 26.5 per cent (85 out of 317 patients). On the other hand in the USA and Canada pyriform fossa tumours are much more common (61 per cent in Toronto General Hospital and 75 per cent in M. D. Anderson Hospital, Houston, Texas) (Bryce, 1967; MacComb and Fletcher, 1967).

Men were more affected than women for all types of hypopharyngeal tumours in this study. Women are affected much more commonly by postcricoid tumours as shown in most series.

The age incidence shows two peaks at 31–35 years and 56–60 years. In other series the median age incidence was 50–60 years (Zagars and Norante, 1987) and 55–65 years (Michales, 1987). The first peak is formed of 42 patients out of 317 (13.2 per cent) and the second peak is formed of 50 patients out of 317 (15.8 per cent). This may be attributed to the nutritional deficiency in Upper Egypt and prevalence of Bilharsiasis with chronic depletion of blood and sideropenic anaemia secondary to Bilharsiasis. The reason men are affected much more commonly than women could be that as they work in agriculture they get infected from water in the fields. Dietary deficiency of vitamin C appears to interfere with iron absorption and also increase the incidence

of head and neck cancer (Keane *et al.*, 1981; Cann *et al.*, 1985; Schottenfield, 1985). This may be attributed to racial causes as nasopharyngeal cancer in north Africa (Tunisia, Sudan, Uganda) shows a substantial incidence at a young age (up to 20 per cent) in addition to the old age peak (Shmauz and Temple, 1972; Cammoun *et al.*, 1974; Hidayatalla *et al.*, 1983).

The differentiation of squamous cell carcinoma into poorly, moderately and well differentiated occurred in all age groups. However poorly differentiated squamous cell carcinoma in our study did not affect extremes of age and this may be of some significance in the prognosis of such tumours. This may be explained by the small number of patients included.

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Address for correspondence:  
Dr Ezzat M. Saleh,  
Department of Otolaryngology,  
Assuit Medical School,  
Assuit,  
Egypt 71516.