

such complications as pneumothorax, subcutaneous emphysema, and paratracheal false passage. We determined that the use of the LMA or COPA during FOB guided PDT facilitates a good view of the upper trachea and avoids the possibility of accidental extubation or puncture of the tracheal tube cuff. However, it was observed that these patients who required reintubation, had generalized swelling of the supraglottic structures, and edematous larynx in the laryngoscopic view. In these patients, ETT was performed again, and endotracheal tube placement was successful and PDT was completed without any problem in the hemodynamic variables and oxygenation. Airway loss during the changing of the ETT with the COPA or LMA devices for PDT is a limitation of this technique. However, puncture of the tracheal tube cuff by needle, or accidental extubation during PDT may also cause airway loss and gastric aspiration.

In conclusion, using both the LMA and the COPA as an alternative to ETT allows certain identification of the important landmarks within the larynx and trachea and provides an empty trachea during tracheostomy, thus allowing exact positioning of the tracheal puncture. Our study suggested that, although more chin and head manipulations were required to maintain a patent airway, COPA was an equally effective airway device as the LMA in PDT procedure. However, the need for airway manipulation makes COPA a less hand-free device than LMA, and this contributes to the greater acceptance of the LMA. Both devices could be used for airway management during PDT.

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## References

1. Griggs WM, Myburgh JA, Worthley LI. A prospective comparison of a percutaneous tracheostomy technique with standard surgical tracheostomy. *Intensive Care Med* 1991; 17: 261-263.
2. Lyons BJ, Flynn CG. The laryngeal mask simplifies airway management during percutaneous dilational tracheostomy. *Acta Anaesthesiol Scand* 1995; 39: 414-415.
3. Greenberg RS, Brimacombe J, Berry A, Gouze V, Piantadosi S, Dake EM. A randomized controlled trial comparing the cuffed oropharyngeal airway and the laryngeal mask airway in spontaneously breathing anesthetized adults. *Anesthesiology* 1998; 88: 970-977.
4. Audu PB, Loomba N. Use of cuffed oropharyngeal airway (COPA) for awake intracranial surgery. *J Neurosurg Anesthesiol* 2004; 16: 144-146.
5. Ezri T, Szmuk P, Evron S, Warters RD, Herman O, Weinbroum AA. Nasal versus oral fiberoptic intubation via a cuffed oropharyngeal airway (COPA) during spontaneous ventilation. *J Clin Anesth* 2004; 16: 503-507.

## Risk factors associated with esophageal cancer in North of Iran

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Esophageal cancer ranked fourth in digestive system malignancies and constitutes 2% up 5% of all identified ones. One of the main characteristics of this lethal disease is its specific geographical distribution that its reason has remained unclear, yet. For instance, its incidence has been reported to be 3/100,000 in Europe and USA. However, in some parts of central Asia, which is known as esophageal cancer belt including Turkmen Sahra of Iran and China have been reported to be 115/100,000 and 130/100,000.<sup>1</sup> Esophageal cancer in the north east of Iran, (Turkmen Sahra in Golestan Province) were reported 165 and 195/100,000 for females and males, during 1980s. Furthermore, in 1995 the number of registered esophageal cancer cases in Mazanderan province was approximately 115 that denoted 28% of the total of the district and 56% of the whole esophageal cancers of the country. When Golestan in northeast of Mazanderan was announced as a new province in 1996 with the total population of 1,466,289 comprising 710,287 men and 716,001 women, the documented total number of cancer was 465 consisting of 244 males and 221 females. During that time, the registered patients with esophageal cancer were 125, comprised 26.8% of whole cases within newly generated province. However, in 1998 the involved patients were 93 (27.6% of all malignancies). Thus, smoking cigarettes, drinking alcohol, malnourishments, bacterial, fungal, viral agents and inheritance were regarded as some etiologic factors of cancer.<sup>2</sup> In Iran, there were several studies carried out concerning epidemiology of esophageal cancer as nutritional states, state of gene expression of P53 protein, and esophageal cancer. Papillomavirus, Cytomegalovirus and Epstein-Barr virus are the etiologic factors. Furthermore, there was other studies about esophageal cancer conducted by Tehran University of Medical Sciences, and Health Research Institute in Babul and Europe concerning nutrition, hygienic practices, and cultural, economical and environmental factors.<sup>2</sup> World Health Organization (WHO) carried out an estimation on health care and population construction trends as well as considering lifestyle and environmental changes; they found that the involved patients were approximately 50% from the year 2000 and the mortality rate increased (5 to 8 million) annually.

This cross sectional descriptive study was designated to assess certain risk factors associated with esophageal cancer particularly in nutritional points of view. The cases were selected from 2002-2004 by referring the cancer referral center pathology laboratory located in Gorgan (northeast of Iran). From the registered lists, after recording the addresses of cases, some trained personnel referred to their homes. A total number of 139 cases were selected including 109 cases of squamous cell carcinoma, 18 cases of adenocarcinoma and 12 cases of undifferentiated carcinoma types. The controls were 500 healthy individuals (chosen in random) adapted in terms of age, gender and place of residence. A questionnaire concerning of several information as personal characteristics, history of cancer in the family, disease in the past, any particular addiction to drugs or cigarettes, stale food, existing dietary habits of the patients before commencement of clinical symptoms were filled for each case and control. The collected data were analyzed using Chi-square and odds ratio analytical methods (Statistical Package for Social Sciences Version -10 software).

The cases were consisted of 41 women and 98 men, whereas in controls they were 146 females and 354 males. The mean age for both groups was 60 years. Cases were 52.5% farmers, 4.3% governmental employees and 43.2% in business, while this figure for controls were 35%, 3% and 62% (Table 1). Amongst cases and controls, 10.8% and 3.2% had used spices as pepper with their meals. Concerning of bread provision, within the cases 36% used home baked bread, 10.1% from village and 38.1% from city bakeries. In controls, they were 19%, 6.4% and 47.4%, respectively. There was significant difference between types of bread and esophageal cancer ( $p=0.001$ ). Considering meat consumption, 44.6% of the cases used to consume lamb, goat and 7.2% beef, while among controls, the records were 31.4% and 18.8%, respectively. Another factor of comparison in cases and controls was the type of cooking oil they consumed. In cases, 80.6% used saturated oil, while 2.9% utilized animal fat for cooking purposes. Though amongst control group, the figures were 69.8% and 3%, respectively ( $p=0.001$ ). Moreover, within patients with cancer, 38.1% used to take red meat, 41% white meat and 6.5% used both; while the rates were 41%, 24.4% and 6.4% in controls, respectively. In consideration of addiction to cigarettes ( $\geq 3$  per day), of the cases, 19.8% were smokers and this was 17.3%, in controls. Furthermore, 53.2% of the cases, used to take fresh vegetables and fruits; while it was 57% in controls. Besides, 62.6% of the cases and 44.6% of controls used to drink hot tea, the latter finding showed significant relationship between hot edibles (both tea and meals) and esophageal cancer ( $p=0.001$ ). The findings showed that

25.2% of the cases had family history of cancer; while in controls, only 0.98% of them had such record; thus, there was a significant difference between the 2 findings ( $p=0.0001$ ). Furthermore, in cases, 21.6% showed esophageal cancer in first line relatives (OR=7.6), but controls did not, so the concluding result by accurate fisher's test, indicated meaningful relationship between the 2 groups ( $p=0.001$ ). As a result, we found interaction between esophageal cancer and consumption of stale food and butter ( $p=0.004$ ).

In our study we found that almost 44.6% of cases used to take lamb and goat as a part of their dietary tradition. This figure was a matter of concern, since higher red meat intake naturally induces higher fat ingestion. In previous studies, consumption of home baked bread was reported as one of the possible risk factor of cancer in Turkmen Sahra; because the indigenous population used to keep the wheat in their basements and possibility of contamination with fungi and production of materials such as aflatoxins and silica fibers were one of the possible risk factors. In our study, we observed that using home baked bread from local wheat exhibited significant difference between 2 groups; so the latter finding was found likely risk factors of the disease. Another study in China pointed out other risk factors including water in causation of esophageal cancer.<sup>3</sup> As a result of remarkable regional incidence

**Table 1** - Frequency of some relative risk factors for esophageal cancer in cases and controls, northeast of Iran, Turkmen Sahra.

Variables	Cases	Controls
<i>Gender</i>		
Male	98	354
Female	41	146
Mean of age	60	60
Family history of cancer	25.2	0.98
Fresh vegetables and fruits	57	62.6
Drink Hot Tea	62.6	44.6
Use Spices	10.8	3.2
<i>Employment status</i>		
Farmer	52.5	35
Government staff	4.3	3
Business	43.2	62
<i>Bread</i>		
Home baked	36	19
Village bakery	10.1	6.4
City bakery	38.1	47.4
<i>Meat Consumption</i>		
Lamb and goat	44.6	31.4
Beef	7.2	18.8
<i>Cooking oil</i>		
Saturated oil	80.6	69.8
Animal fat	2.9	3

Data were expressed as percentage

of esophageal cancer, it necessitates demographical studies between different ethnic groups. For instance in the United States, different dietary habits between the whites and the blacks have marked various effects in esophageal cancer manifestations.<sup>4</sup> In the present study, the association between the type of cooking oil and the cancer was also shown. This is quite clear that inappropriate dietary habits would stimulate the outcome of the disease, for example in France, taking hot drinks and high amount of butter look upon as an esophageal carcinogenic factor.<sup>5</sup> As a fact, our study does not rule out this as a possible risk factor either; but in general taking stale food and highly spiced meals which contain stimulants, can cause dystrophy of esophageal tissue due to their natures. This is quite evident in order to face this dilemma; so the past nutritional history of the patients should be noted and the influential factors in dietary habits of them must be corrected. In reality both groups (cases and controls) did not use to take adequate amount of fresh vegetable and fruits and as we know consumption of these 2 items as raw and fresh contain extraordinary nutritional value. It is noteworthy that fruits and vegetable have inhibitory role on cancer; because of valuable nutrients and vitamins specially antioxidants. As mentioned earlier, due to incidence of esophageal cancer in Turkmen Sahra and more importantly its frequency in family relatives, it is quite obvious that inheritance plays a key role and must be considered seriously. The latter phenomenon was identical to our findings such as significant relationship between esophageal cancer and rate of its occurrence in relatives. Peculiar attitudes of indigenous population, for example: smoking Hubble-Bubble and tobacco (or pipe tobacco) which are commonly practiced without detoxification, as part of behavioral patterns, might one of the risk factor of the disease even with satisfactory nourishment states.

As a conclusion in addition to mentioned risk factors, some other factors as mode of nourishment, employment states, special hygienic habits and inheritance were important factors in esophageal cancer etiology among the studied subjects. The authors believe that the results of this investigation could contribute in further studies for better identification of etiological agents and other risk factors responsible for esophageal cancer in order to control the disease in both the country and the region under study.

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## References

1. Allen JW, Richardson JD, Edwards MJ. Squamous cell carcinoma of the esophagus: a review and update. *Surg Oncol* 1997; 6: 193-200.
2. Moradi A, de Villiers EM, Mokhtari-Azad T, Mahmoudi M. Detection of Human Papillomavirus DNA by PCR in Esophageal Squamous Cell Carcinoma from Turkmen Sahra, North-east of Iran. *Iranian Biomedical Journal* 2002; 6: 19-24
3. Yokokawa Y, Ohta S, Hou J, Zhang XL, Li SS, Ping YM, et al. Ecological study on the risks of esophageal cancer in Ci-Xian, China: the importance of nutritional status and the use of well water. *Int J Cancer* 1999; 83: 620-624.
4. Brown LM, Swanson CA, Gridley G, Swanson GM, Silverman DT, Greenberg RS, et al. Dietary factors and the risk squamous cell esophageal cancer among black and white men in the United States. *Cancer Causes Control* 1998; 9: 467-474.
5. Launoy G, Milan C, Day NE, Pienkowski MP, Gignoux M, Faivre J. Diet and squamous-cell cancer of the oesophagus: a French multicentre case-control study. *Int J Cancer* 1998; 76: 7-12.

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## Prevalence of passive smoking in children and adolescents in Kahramanmaras, Turkey

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Exposure to environmental tobacco smoke (ETS) is a well-known health hazard in children, which is also known as passive smoking. An ETS exposure causes a wide variety of adverse health effects in children, including lower respiratory tract infections such as pneumonia and bronchitis, coughing, wheezing, worsening of asthma, and middle ear disease. Children's exposure to ETS may also contribute to cardiovascular disease in adulthood and to neurobehavioral impairment.<sup>1</sup> The World Health Organization reported that almost half of the children in the world (nearly 700 million) are exposed to cigarette smoke and most of this exposure takes place at home.<sup>2</sup> Even though the laws combating tobacco products decreased the exposure to ETS, changed the smoking habits at work and public areas, smoking at home next to children unfortunately could not be prevented. However, it was reported in some studies that the recognition of the adverse effects of exposure to cigarette smoke by the society also led the parents to realize the importance of protecting their children from the cigarette smoke at home.<sup>3</sup> Starting from this point, the parents utilized various strategies in order to limit the exposure of their children to ETS. To achieve this