KANSER TANISINDA ADLİ OTOPSİLERİN ROLÜ

The Role of Forensic Autopsies in Diagnosis of Cancer

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Çengel G, Demiroğlu Uyanıker Z, Ünüvar Ü, Can İÖ, Olgun EG. Kanser tanısında adli otopsilerin rolü. Adli Tıp Bülteni 2013; 18(2):47-51.

ABSTRACT

Death from cancer is mostly considered as natural deaths. The role of cancer as a cause of death in forensic autopsies such as sudden deaths, negligence or malpractice claims is being investigated. In a small amount of forensic cases, cancer is found incidentally at the autopsy. The aim of this study was to reveal characteristics of the cases in which cancer was diagnosed and malignancies' types in medico legal autopsies. The role of forensic autopsies in determining oncological diseases was discussed.

Forensic autopsies were performed in the Morgue Department of Forensic Medicine Council in Izmir for eight years were retrospectively reviewed. Postmortem histopathological examination performed and malignant tumors diagnosed were included. Data about age, sex, location of tumors, immediate causes of death and the potential relation between tumors and the primary cause of death were investigated.

In eight-year period (between 2001 and 2009), 3722 medicolegal autopsies were performed by postmortem histopathological examination. 79 cases with malignant tumors included in the study, 79.7% were male and 20.3% were female, mean age was 54.96±20.35 (range: 7-88) years. The tumors were most frequently located in respiratory system (35.4%), gastrointestinal system (19%), genitourinary system (10.1%) and central nervous system (8.9%) respectively. According to histopathological classification, the most frequent tumors were epithelial tumors (65.8%), followed by hemopoetic (12.7%), mesenchymal (7.6%). Cause of death was considered as cancer related complications in 73.4%, other natural causes in 7.6% and external factors such as traumas and intoxications in 12.7%.

Providing accurate cancer statistics by only clinical trials or medical autopsies that are diminished nowadays and clinical cancer outputs seems to be inadequate. We participated that investigating malignancies in large series of forensic autopsies would be contributed to data about public health.

Keywords: Cancer, medicolegal autopsy, cause of death.

ÖZET

Kanser, çoğunlukla doğal orijinli bir ölüm nedeni olarak karşımıza çıkmaktadır. Bununla birlikte kanser olguları; ani beklenmedik ölüm, ihmal veya malpraktis iddialarında adli nitelik kazanmakta ya da adli otopsilerde rastlantısal bir bulgu olarak karşımıza çıkmaktadır. Medikolegal otopsilerde, onkolojik hastalıkların yerinin, ölüm nedenleri veya ölüme neden olabilecek diğer faktörler yönünden incelendiği az sayıda çalışmaya ulaşılmıştır. Bu çalışmada; bölgemizde yapılan adli otopsiler arasında malignite tanısı almış olguların özelliklerinin ve malignite türlerinin ortaya konulması amaçlandı. Ayrıca, onkolojik hastalıkların, ölüm nedeni ve ölümde rol alan/kolaylaştıran etmen olarak rolünü ortaya koymada adli otopsinin yeri ve önemi değerlendirilmeye çalışıldı.

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**Some part of this study was presented IV[th] Mediterranean Academy of Forensic Sciences Meeting(MAFS), 14-18 October, 2009 Antalya, TURKEY.*

Geliş tarihi: 15.01.2014 Düzeltme tarihi: 02.05.2014 Kabul tarihi: 28.05.2014

Grup Başkanlığı Morg İhtisas Dairesi'nde yapılan adli otopsi raporları retrospektif olarak gözden geçirildi. Postmortem histopatolojik incelemesi yapılmış ve malign tümör tanısı almış olgular çalışmaya dahil edildi. Olguların yaşı, cinsiyeti, tümörün yerleşim yeri, yayılım gösterdiği organlar, ölüm nedeni ve ölümle ilişkisi araştırıldı.

Postmortem histopatolojik inceleme yapılan 3722 olgunun 86'sında tümör tespit edilmişti. Bunların 7'si benign tümör tanısı aldığı için çalışma dışı bırakıldı. Çalışmaya dahil edilen 79 malign tümör tanısı alan olgunun %79.7 erkek, %20,3 kadındı. Yaş ortalaması 54.96±20.35'dı (aralık 7-88). Tümörlerin en sık solunum sistemi % 35.4, gastrointestinal sistem % 19, genitoüriner sistem % 10.1 ve santral sinir sisteminde %8.9 yerleşim gösterdiği gözlendi. Histopatolojik sınıflamaya göre en sık tümörler, epitelyal (%65.8), hemopoetik (%12.7), mezenkimal (%7.6)'di. Ölüm nedeninin olguların %73.4 tümöre bağlı komplikasyonlar ve metastazlar olduğu, %7.6'sında başka doğal nedenler, %12.7'sinde travma ve intoksikasyon gibi diğer nedenlerdi.

Günümüzde tıbbi (hastane) otopsilerinin giderek azaldığı ve klinik tanıların kanser istatistiklerini oluşturmada yeterli olmadığı göz önüne alındığında, adli otopsilerde malignitelerin büyük olgu serisi çalışmalarıyla araştırılmasının, toplumsal sağlık verilerine önemli katkı sağlayacağı düşüncesindeyiz.

Anahtar kelimeler: Kanser, adli otopsi, ölüm nedeni.

INTRODUCTION

Death from cancer is mostly considered as natural deaths. However, in forensic cases like sudden deaths, negligence or malpractice claims the role of cancer on the cause of death is being investigated. Malignancies could also be found incidentally in medico-legal autopsies reported by many case reports and in a few larger series (1-10). Since hospital autopsies are diminished, medico-legal autopsies gained more importance for cancer statistics (11-14).

Several studies have been conducted aiming to highlight the findings and discordances between clinical and autopsy diagnoses of malignancies. Malignancy was found in a rate of 5.9 % and 8.3 % respectively in two different study carried out in medico-legal autopsies (15,16). In a similar study involving hospital autopsies in New Orleans the rate was found to be 20 % (17). The ratio of malignancies as a cause of death in medico-legal autopsies was reported to be between 0.02 % and 8.6 % in different surveys carried out in different countries including Turkey (9,10, 15-19).

A few and limited studies were performed in relation to this issue in our region. The aim of the present study was to reveal the types of malignancies and the characteristics of the cases in which cancer was diagnosed in medico-legal autopsies. Furthermore, it was aimed to draw attention again to the role of medico-legal autopsies in registration of cancer statistics.

MATERIALS and METHODS

Autopsy reports of the autopsy cases in the Morgue Department of Forensic Medicine Council in Izmir for eight years were retrospectively reviewed. Cases for which postmortem histopathological examination was performed were evaluated and those with a diagnosis of malignant tumors were included in the study.

Data about age, sex, and location of tumors, immediate causes of death and the potential relation between tumors and the primary cause of death was investigated.

Statistical assessment of the data obtained was carried out using the x^2 test. Unless otherwise stated, the values are appropriately presented either as means ± standard deviation (SD) or percentage. Standard methods were used for descriptive statistics. All statistical tests were two-tailed and a P value <0.05 was considered to be statistically significant. Statistical analysis was carried out using Statistical Package of Social Science (SPSS), version 15.0, the (Chicago, IL, USA). The study was carried out upon approval of the Ethical Committee of Council of Forensic Medicine.

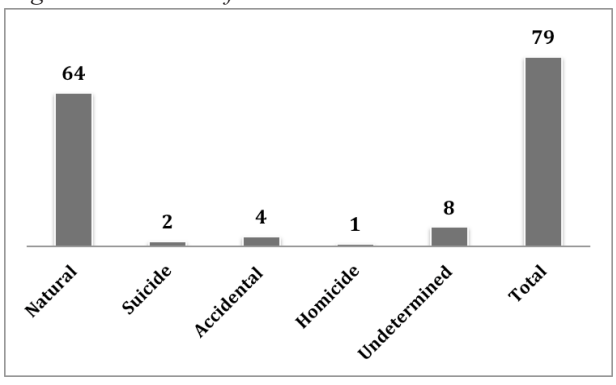
RESULTS

The number of medicolegal autopsies for which postmortem histopathological examination had been performed was detected to be 3722 during the 8 years of study period (between 2001 and 2009). In 86 of those 3722 cases, such kinds of tumors were observed.

Autopsy reports of 86 cases were evaluated according to determined parameters retrospectively. In seven of 86 cases, the tumors were determined to be ~~as~~ benign and so excluded from the study. The remaining 79 (2.1 %) autopsy cases with malignant tumors were included in the study. Sixty three (79.7%) of these cases were male and sixteen (20.3%) were female, mean age was 54.96±20.35 (range: 7-88 years).

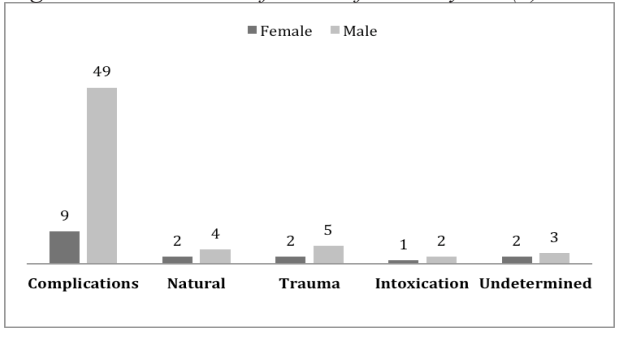
In the majority of the cases, the manner of death was natural of 64 cases (81 %) and there was only one case of homicide (Fig 1.).

Figure 1. Manners of death.



Of the total 79 cases, the cause of death was considered to be as cancer-related complications in 58 cases (73.4%), other natural causes in 6 cases (7.6%) and external factors such as traumas and intoxications in 10 cases (12.7%). The cause of death was unknown in 5 cases (6.3%) (Fig 2).

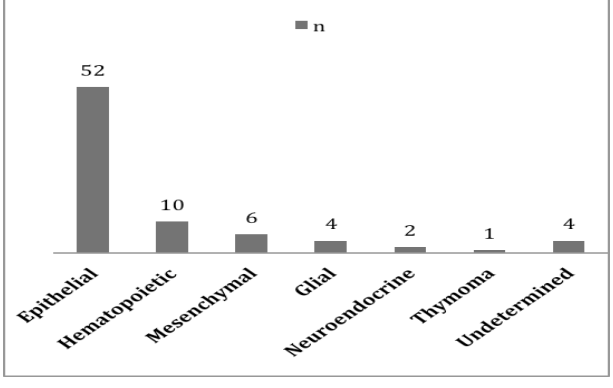
Figure 2. Distribution of cause of death by sex (n).



Cancer related complications

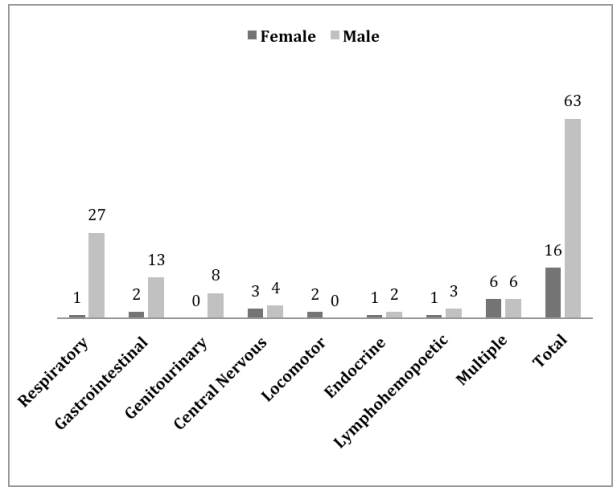
According to histopathological classification of tumors; the most frequent tumors were epithelial tumors (65.8%), followed by hematopoietic (12.7%), mesenchymal (7.6%), glial (5.1%), neuroendocrine tumors (2.5%) and thymoma (1.3%). The tumors could not be differentiated in 5.1% of the cases (Fig 3). There was no significant correlation between histopathological classifications of tumors and cause of death (p>0.05).

Figure 3. Histopathological classification (n).



The tumors were most frequently originated from the respiratory system (35.4%), the gastrointestinal system (19%), the genitourinary system (10.1%) and the central nervous system (8.9%) as respectively. The males most frequently had tumors from the respiratory system (42.9%) and the females from the endocrine system (25%) (Fig 4).

Figure 4. Distribution of tumor localization by sex.



DISCUSSION

Malignancies could also be found incidentally in medico-legal autopsies (1-10). In the present study such kind of malignancies was found 2.1 % in 3722 medico-legal autopsy cases in which histopathological examination was performed. The ratio of malignancies as a cause of death in medico-legal autopsies was reported to be between 0.02 % and 8.6 % in different surveys carried out in different countries including Turkey (9,10, 15-19). In one study includes hospital autopsies, this ratio is higher (20%) (17). Reasons of these different ratios might be due to study design, including criteria of the cases, autopsy performing ratios and limitations of this study. Akyıldız et al found primary cause of death with malignant tumors with a lower rate (0.25%) in a study conducted in Istanbul Turkey (18). However the age and sex distribution of this study was similar with literature of cancer (8-10).

Since hospital autopsies are diminished, medico-legal autopsies gained more importance for cancer statistics (11-14). Of the cases, 73.3% of cause of death was related to cancer complications. However, it would be more convenient to think an unknown cancer when the manner of death reported as natural.

According to originated from systems; frequency of

primary tumor sites could differ between countries in like most common cancer is gastric in Japan, colon cancer in USA (21).

The most common sites of malignant tumors in present study were the respiratory system, gastrointestinal system and genitourinary system respectively as found in Akyıldız et al (18) and Burton et al study (20). Lungs were the mostly effected in respiratory system tumors as in other studies. Epithelial tumor was found the most common tumor type consistent with the literature (17-20).

Providing accurate cancer statistics in community by only clinical cancer outputs, death certificates and medical autopsies, which are diminished nowadays, seems to be inadequate. We participated that investigating malignancies in larger series of forensic autopsies would be contributed to the data about public health.

CONCLUSION

Our findings could contribute the cancer data from medicolegal autopsy cases. Incidental cancers are also important for health data. Sudden death from an undiagnosed neoplasm is an exceptionally rare event however cancer and its complications must be kept in mind.

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