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Hornbeck P. Assay for antibody production. Colign JE. Kruisbeek AM, Marguiles DH, editors. Current Protocols in Immunology. New York: Greene Publishing Associates; 1991. p. 105-32.
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Thesis
Erakıncı G. Donörlerde parazitlere karşı oluşan antikorların aranması. İzmir: Ege Üniversitesi Sağlık Bilimleri Enstitüsü. 1997.
Article in Electronic Format
Morse SS. Factors in the emergence of infectious diseases. Emerg Infect Dis (serial online) l995 Jan-Mar (cited 1996 June 5): 1(1): (24 screens). Available from: URL: http:/ www.cdc.gov/ncidodlElD/cid.htm.

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Abstract (average 200-400 word)
Introduction (200-500 word)
Methods (800 -1000 word)
Results (800-1000 word)
Discussion and conclusion (> 1200 word)
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Whole text should not exceed 4500 words except for resources and English summary.

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CONTENTS

EDITORIAL

We are publishing a journal…

These charming words, along with the questions like how? and when? A painful birth, but exciting, ambitious, a hopeful beginning… The whole team's scanning of the dozens of journals, setting of the details carefully, the content editing, receiving of the cover proposal, discussions, evaluation of the criticisms and finally, we are beginning.

Our goal is to be the best, our aim is to contribute to the universal science as much as possible, our team is strong and our support great… As the editorial board, we thank to our Rector Prof. Tarık YARILGAÇ who supported all kinds of help for us, to the lecturers of the University of Middle Black Sea Universities Collaboration Platform and the employees of the Ordu University, Information Technology Center.

Hope to see you again in other journals.

PhD, Asst. Prof. Ülkü KARAMAN

Director in Charge

Middle Black Sea Journal of Health Science April 2015; 1(1): 1-6

ORIGINAL ARTICLE

Evaluation of Tick-Bite Cases with Infection Agents among Patients Visiting State Hospital in Malatya, Turkey

Ülkü Karaman[1], Neval Berrin Arserim[2], Pınar Yücefirat[3], Ali Beytur[4], İlhan Geçit[4], Erdal Karcı[5], Mesut Karadan[5]

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Abstract

Objective: The study aims to determine where the patients who applied to the state hospital with tick-bites between April 2009-December 2011 to evaluate bitten areas of the body and species separation that forms infestation and the cases in terms of bacterial and viral infection.

Methods: The patients having tick-bites applied to the state hospital to form the material of the study. Anamnesis was taken from the patients applied to the hospital. It was recorded that where the patients came from and where the infestation was.

Results: Patients' serological test results were found within normal levels. Tick type found as 69 *Hyalomma marginatum*, 29 *Rhipicephalus bursa*, 27 *Hyalomma anatolicum anatolicum*, 21 *Hyalomma aegyptium*, 19 *Hyalomma anatolicum excavatum*, 12 *Rhipicephalus sanguineus*, 9 *Dermacentor marginatus*, 7 *Haemaphysalis parva*, and 4 *Hyalomma detritum*. Also it was determined that there were 3 larvas and 5 nimfs belonged to Hyalomma species in a growth phase and 1 nimf belonged to Haemaphysalis.

Conclusion: In the study it was concluded that the *H. marginatum*, known as Crimean-Congo Hemorrhagic Fever (CCHF) vector, is more common than the other types and it is a risky situation for the city to be geographically near to the regions where the virus is seen, thus some precautions should be taken.

Key words: Tick, Malatya, bacterial infection, viral infection

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The study was presented as a poster at 16th National Congress of Parasitology which held on between 1th-7th November 2009, in Adana/Turkey.
DOI: 10.19127/mbsjohs.85470

Introduction

The ticks spreading to all regions around the world are bloodsucker arthropods and the species that are belong to Ixodidae family are important in transmitting the infection agents to humans. These are active especially between spring and autumn (Karaer et al., 1984;Gargili, 2009).

Ticks have to suck blood in each growth phase throughout their life (larvae-nymph-mature) and females suck blood more than males (Karaer et al., 1984; Gargili, 2009).

The diseases in which ticks are vectors are indirectly important because of their damages in the animals that are economically important, and also they are directly important because of the high mortality infections they cause in humans. Ticks are the vectors of bacterial (tularemia, Lyme disease), rickettsia (spotted fever, Q fever, ehrlichiosis), parasitic (babesiosis) and viral (tick borne encephalitis, hemorrhagic fevers) infection agents among zoonotic agents (Karaer et al., 1984; Despommier et al., 2000; Gargili, 2009).

Vector ticks, in a growth phase, can convey disease agent taken from the infected host to the new host where they sucked blood in the next growth phase (Sparagano et al, 1999). Most of the disease agents are also passed to infected ticks' eggs so they are conveyed to the new generations and this provides disease agents to spread between tick populations (Jongejan and Uilenberg, 2004). Ticks of the same type, as being the vector, can carry more than one cause of disease too (viral, parasite, bacterial) (Sparagano and Jongejan, 1999).

The study aim was to determine where the patients who applied to the state hospital with tick-bites between April 2009 and December 2011 to evaluate bitten areas of the body and species separation that forms infestation and the cases in terms of bacterial and viral infection.

Materials and Methods

The collection of samples

The patients having tick-bites applied to the state hospital to form the material of the study between April 2009 and December 2011. Anamnesis was taken from the patients applied to the hospital. It was recorded that where the patients came from and where the infestation was.

Microbiological, Biochemical and Hematologic Tests

The cases were monitored in terms of bacterial (Brucellosis, Salmonellosis, Q fever) and viral infections (CCHF). In the blood samples taken for viral infection (CCHF), complete blood cell count with full blood count, prothrombin time (PTZ, INR) values and biochemical parameters such as Alanine Transaminase (ALT), Aspartate Aminotransferase (AST), Gama-Glutamil-Transferase (GGT), Lactate Dehydrogenase (LDH) and Creatine Kinase (CK) were followed. Serums of the taken blood were separated to be evaluated in terms of bacterial and they were kept until it worked in -20^0C. They were sent to Dicle University Medical Faculty Department of Microbiology appropriately for cold chain procedure.

In the serums collected from patients Rose Bengal agglutination test (Seromed) for Brucellosis and Salmonellosis (O and H antigens) Salmonella lam agglutination test (TYDAL Belgium) were used.

Automatic Elisa device (DSX, Dynex Tecnologies) was used for Q fever. Therefore, IgG antibodies (Virion/Serion, Germany) were studied against Coxiella burnetii phase II antigens.

The diagnosis of the tick

The all collected ticks were put in glass covered tubes that included 70% Alcohol -Glycerin and kept in Parasitology Laboratory until they were examined. The species separation of the ticks was done according to the diagnostic key by the help of stereomicroscope. Afterwards the ticks were taken into the glass covered tubes again and they were kept

Results

The average age of the 210 patients applied with the complaints of tick-bites was 24.65±2.07. Tick bites areas and numbers were determined as 37 penis, 29 breast, 27 pubic, 22 back, 18 foot and leg, 18 hip, 17 neck-head-nape of the neck, 15 arm and arm pit, 12 ear and 11 abdomen. Also, it was stated that 4 of the ticks brought to Parasitology Laboratory were caught while they were perambulating on the human body and 27 ticks were found in their houses and brought by locals.

It was found out that 69 of the ticks that were diagnosed according to their species were *H. marginatum* (Figure 1, Figure 2a,2b), 29 of them were *R. bursa*, 27 of them were *H. a. anatolicum* (Figure 3), 21 of them were *H. aegyptium* (Figure 4), 19 of them were *H. a. excavatum* (Figure 5), 12 of them were *R. sanguineus* (Figure 6), 9 of them were *D. marginatus* (Figure 7), 7 of them were *H. parva* (Figure 8) and 4 of them were *H. detritum*. Also it was determined that there were 3 larvas and 5 nimfs belonged to Hyalomma species in a growth phase and 1 nimf belonged to Haemaphysalis. Moreover 4 of the ticks were *O. lahorensis* from Argasid ticks. *O. lahorensis* ticks were seen while they were perambulating on the patient's body.

It was also found out that 7 of the ticks that were found in their houses and brought to the laboratory by the locals were *H. parva*, 10 of them were *H. anatolicum* and 10 of them were *H. aegyptium.*

Figure *1:* Hyalomma marginatum *female*

Figure 2a: *Hyalomma marginatum*

Figure 2b: *Hyalomma marginatum*

Figure 3: *Hyalomma anatolicum anatolicum* male

Figure 4: *Hyalomma aegyptium* male

Figure 5: *Hyalomma anatolicum excavatum* female

Figure 6: *Rhipicephalus sanguineus* female

Figure 7: *Dermacentor marginatus* female

Figure 8: *Haemaphysalis parva*

All of the serums in the serologic tests were found negative in terms of Salmonella, Brucella and Q fever.

Discussion

The ticks spreading to all regions around the world are bloodsucker arthropods which transmit several infections including viral, protozoan, bacterial (e.g. Lyme disease) and rickettsia infection agents (e.g. detrital fever, Ehrlichiosis, Q fever, and Tularemia etc.). Major vectors of the tick-originated infections belong to Ixodidae family and it has been detected that *H. marginatum* type of ticks in Turkey are Crimean-Congo Hemorrhagic Fever (CCHF) vector (Karaer et al., 1984; Despommier et al., 2000; Gargili, 2009). In order to control the tick population, detecting their types and distribution will play an important role in planning the most effective and long lasting methods to fight with them.

In the phenomenon's applying to Emergency Service in Turkey, the distribution of the cases diagnosed as CCHF by year are as following: 150 in the years 2002-2003, 249 in 2004, 266 in 2005, 438 in 2006, 717 in 2007 and 1315 in 2008. Mortality rates were 0 in 2002, 6 in 2003, 13 in 2004, 13 in 2005, 27 in 2006, 33 in 2007 and 63 in 2008 (Ergonul, 2006; Kara, 2008; Taskesen et al., 2008;Yilmaz et al., 2009). Also Sumer (Sumer, 2010) stated that 168 tick-bite phenomenons applied to the Emergency Service of Kaş State Hospital between July 2007 and February 2009 (Sumer, 2010). In the study, 210 tick-bites that applied to the hospital between March-November 2009 were determined and in the follow-up of the phenomenons no infection was discovered.

It was notified that ticks were often found on the skin with hair, in the back part of the ear and on femur region (Edlow and McGillicuddy, 2008). Similar to that, Taşkesen and his friends declared that the most common the localization was on legs (37%), and on corpus (21%). As for Al and his friends (Al et al., 2008) tick localization was on head-shoulder and on legs, while Sümer (Sumer, 2010) discovered the ticks mainly on legs (34.52%), on corpus (11.9%) and on auxiliary region (8.34%). Parallel to that, in the study, It has been confirmed that 37 of bites on penis, 29 of bites on breast, 27 of bites on pubic, 22 of bites on back, 18 of bites on foot and leg, 18 of bites on hip, 17 of bites on neck-head-nape of the neck, 15 of bites on arm and arm pit, 12 of bites on ear and 11 of bites on abdomen.

Many types, which are connected to the species as Ixodes, Boophilus, Dermacentor, Amblyomma, Hyalomma and Rhipicephalus, have been reported as vectors (Sparagano et al., 1999). In the studies carried out on tick epidemiology, 32 types, 22 of which are found commonly and 15 of which have been encountered in each of our geographical regions, have been detected (Karaer et al., 1997; Sayin et al., 1997). Crimean-Congo Hemorrhagic Fever has the largest area to spread in the diseases infected by ticks and affects the countries hosting Hyalomma species (Hoogstraal, 1979; Ergonul, 2006). The most important way of contamination is the blood absorption by infected ticks (Whitehouse, 2004). There have been reports stating that the virus can reside and reproduce in ticks lifelong (1-1.5 years) and for generations (transovarial + transstadial transfer) (Sayin et al., 1997).

It was stated that *Amblyomma variegatum, H. marginatum, H. m. rufipes, H. a. anatolicum, H. a. asiaticum, H. truncatum, H. impeltatum, D. marginatus, R. evertsi, R. rossicus* species have the real vector capacity nowadays and especially Hyalomma species play an active role in CCHF epidemics (Hoogstraal, 1979). In our country, the existence of the virus has been discovered in the reboring flourishing periods of *H. marginatum* and in the eggs of females (Estrada—Pena et al., 2007; Vatansever et al., 2007). Besides this species which has been proved to be a vector, CCHF virus has been detected in *Boophilus annulatus, R. bursa, D. marginatus* tick species, too. However, the role of these species as vectors hasn't been proved (Kondratenko, 1976; Hoogstraal, 1979).

In the studies carried out in our country about the spread of CCHF virus in ticks, CCHF virus has been detected in *H. marginatum, H. detritum, R. bursa* and *B. annulatus* species (Gargili, 2009).

In the resource data no research that categorizes ticks in Malatya region on a basis of species has been encountered. Ticks, which were studied in the research as well, have been determined according to their species as 69 *H. marginatum*, 29 R. bursa, 27 *H. a. anatolicum*, 21 *H. aegyptium*, 19 *H. a. excavatum*, 12 *R. sanguineus*, 9 *D. marginatus*, 7 *H. parva*, and 4 *H. detritum*. Also it was determined that there were 3 larvas and 5 nimfs belonged to Hyalomma species in a growth phase and 1 nimf belonged to Haemaphysalis. Moreover 4 of the ticks were *O. lahorensis* from Argasid ticks. In the study, *H. marginatum*, which has been proved to be a vector, and also *H. detritum, R. bursa* and *D. marginatus*, which have been reported to carry CCHF, have been detected. The ticks that have been determined can be a vector for CCHF and a lot of bacterial, parasitic and viral factors with Salmonellosis Brucellosis and Q fever working serologically. It was thought that interpreting the stated diseases and tick infestations together will be more important in terms of following infections epidemiologically.

In the study; because of the fact that *H. marginatum*, which is known as a CCHF virus vector, outnumbers the other species and the city is geographically close to the area, in which this virus has been seen, the city was considered as a critical area and it was concluded that protective precautions were necessary. Under these circumstances it was suggested that public health education should be given on protection from the bacterial, viral and parasitic diseases.

Informed Consent: Written informed consent was obtained from patients who participated in this study.
Peer-review: Externally peer-reviewed.
Author Contributions: Concept – UK, AB, IG.; Design UK, AO; Supervision AÖ,AB; Materials – UK, PY, AB, İG, MK, EK; Data Collection and/or Processing - UK, PY, AB, İG, MK, EK; Analysis and/or Interpretation – UK, NBA, AO; Literature Review – UK, NBA; Writing - UK; Critical Review – PY, AB, IG, AO, NBA
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References

Al B, Yildırim C, Söğüt Ö, Yesilkaya A. The evaluation of 39 tick bites applied to Batman State Hospital Emergency Service in seven months. Akademik Acil Tıp Derg, 2008; **7**: 40-43.

Despommier DD, Gwadz RW, Hotez PJ, Knirsch CA. Parasitic diseases, 4. ed., Apple Trees Prod, New York. 2000

Edlow JA, Mc Gillicuddy DC. Tick paralysis. *Infect Dis Clin North Am*, 2008; 22: 397-413.

Ergonul O. Crimean-Congo hemorrhagic fever. Lancet Infect Dis, 2006; 6: 203-214.

Estrada-Pena A, Vatansever Z, Gargili A, Aktas M, Uzun R, Ergonul O, Jongejan F. Modeling the spatial distribution of Crimean-Congo hemorrhagic fever outbreaks in Turkey. Vector-Borne Zoonotic Dis,2007; 7: 667-78.

Gargili A. Ticks as a vector and the condition in Turkey. ANKEM Derg, 2009; 23: 249-252.

Hoogstraal H. The epidemiology of tick-borne Crimean-Congo hemorrhagic fever in Asia, Europe, and Africa. J Med Entomol, 1979; 15: 307-417.

Jongejan F, Uilenberg G. The global importance of ticks. *Parasitology*, 2004; 129: 3-14.

Kara A. Removing Ticks. Çocuk Sağ ve Has Derg, 2008; 51: 117-122.

Karaer Z, Yukari BA, Aydin L. The ticks in Turkey and ticks as vectors, In: Özcel MA, Daldal N (eds): Arthropod diseases in Parasitology and vectors, T Parasitol Dern Izmir, Turkey. ed: 13. 1997; 363-434,

Kondratenko VF. Importance of ixodid ticks in the transmission and preservation of the causative agent of Crimean hemorrhagic fever in foci of the infection. Parasitologia, 1976; 10 (4): 297-302.

Sayin F, Dincer S, Karaer Z, et al. Status of tick infestation of sheep and goats in Turkey. Parasitologia, 1997; 39: 145-52.

Sparagano O, Allsop MT, Mank RA, Rijpkema SG, Figuerova JV, Jongejan F. Molecular detection of pathogen DNA in ticks (Acari:Ixodidae): a review Exp Appl Acarol, 1999; 23: 929-60.

Sparagano O, Jongejan F. Molecular characterization of ticks and tick borne pathogens. Parasitologia, 1999; 41: 101-5.

Sümer A. The evaluation of the patients applied to Kaş State Hospital Emergency Service due to tick bites. Kafkas Univ Vet Fak Derg, 2010; 16: 49-53.

Taşkesen M, Okur N, Taş M.A. The evaluation of 19 cases applied due to tick-bites Dicle Tıp Derg, 2008; 35: 110-113.

Vatansever Z, Midilli K, Deniz A, Ergin S, Alp H, Gargili A. The vector of Crimean-Congo Haemorrhagic Fever: *Hyalomma m. marginatum*. 15th National Parasitology Conference Abstract Book Kayseri-Urgup,Turkey. 2007; 257

Whitehouse CA. Crimean-Congo hemorrhagic fever. Antiviral Res, 2004 ; 64: 145-60.

Yilmaz GR, Buzgan T, Torunoglu MA, et al. A preliminary report on Crimean-Congo hemorrhagic fever in Turkey. Euro Surveill, 2008; 33: 18953.

Yılmaz RG, Buzgan T, Irmak H, Safran A, Uzun R, Cevik MA, Torunoglu MA. The epidemiology of Crimean-Congo hemorrhagic fever in Turkey, 2002-2007. *Int J Infect Dis*, 2009; 3: 380-386.

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ORIGINAL ARTICLE

The Prevalence of Taurodontism in a North Anatolian Dental Patient Subpopulation

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Abstract

Objective: The aim of this study was to determine the prevalence of taurodontism in a north Anatolian dental patient subpopulation, considering factors such as dental localization.

Methods: We designed a descriptive study evaluated of panoramic radiography of 1044 patients who presented to our Endodontic Services of Dentistry Faculty, Ordu University, in the city of Ordu in the north of Turkey. All the data (age and sex) were obtained from Turcasoft software (Samsun, Turkey). Patients who were less than 15 years at the time of the radiographic examination, records with poor quality radiographs and records with radiographs of only primary teeth were excluded. To minimize the variability in the present study, the examinations were carried out jointly by the first two authors of the article over approximately one month. The taurodontism classification of Shifman was used. At the end of the study, the data were assessed statistically using SPSS 16.0 software (SPSS Inc., Chicago, IL).

Results: In this study, 3813 molar teeth of 936 patients were assessed. Taurodontism was present in 622 (16%) of these teeth. In 410 (66%) cases, the taurodontism affected the maxilla, and it affected the mandibles in 212 (34%) cases. Taurodontism occurred in 75 (12%) first molar teeth, 266 (43%) second molar teeth and 281 (45%) third molar teeth.

Conclusion: Taurodontism was a frequent anomaly in a north Anatolian dental patient subpopulation. The frequency of this anomaly may vary in different ethnic groups.

Key words: Taurodontism, epidemiology, enlarged pulp chamber

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Introduction

Taurodontism can be defined as one of the most important abnormalities in tooth morphology. It is characterized by vertically elongated, extremely large pulp chambers, apical displacement of the pulpal floor and bifurcation/trifurcation of the roots (Durr et al., 1980; MacDonald-Janowski and Li, 1993). A taurodont tooth looks like a normal tooth clinically. However, despite a normal crown size, extension of the rectangular pulp chamber into the elongated body of the tooth, shortened roots and root canals and displacement of furcation are observed radiographically (Terezhalmy, 2001).

The aim of this study was to determine the prevalence of taurodontism in a north Anatolian dental patient subpopulation, considering factors such as dental localization.

Materials and Methods

In this retrospective study, we evaluated panoramic radiographs of 1044 patients who presented to our Endodontic Services of Dentistry Faculty, Ordu University, in the city of Ordu in the north of Turkey between May 2013 and September 2013. All the data (age and sex) were obtained from Turcasoft software (Samsun Turkey). Patients who were less than 15 years at the time of the radiographic examination, records with poor quality radiographs and records with radiographs of only primary teeth were excluded. The final number of patients included in the study was 936 (545 females and 391 males aged 15 to 65 years, with a mean age of 36 years).

Diagnostic Criteria

To minimize the variability in the present study, the examinations were carried out jointly by the first two authors of the article (an assistant professor from the Department of Endodontics and an assistant professor from the Department of Orthodontics) over approximately one month. Throughout the study, in case of disagreement between the first two authors as to the outcome of an examination, the assessment of a third author (an assistant professor in the Department of Endodontics) was accepted. Cases where the three authors could reach no consensus were excluded from the study. The taurodontism classification of Shifman et al. (Shifman and Chanannel, 1978) was used. According to this classification, point A is the lowest point at the occlusal end of the pulp chamber, and point B is the highest point at the apical end of the pulp chamber. X = the distance from A to B/distance from A to the apex of the longest root. A value of ‘X’ between 20 and 29.9% signifies hypo-taurodontism, a value between 30 and 39.9% signifies meso-taurodontism and a value between 40 and 75% signifies hyper-taurodontism (Figure 1). At the end of the study, the data were assessed statistically using SPSS 16.0 software (SPSS Inc., Chicago, IL).

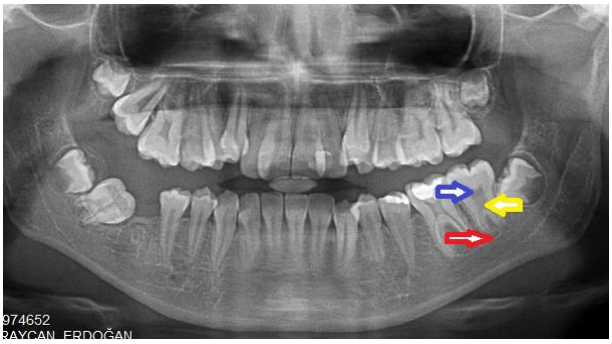

Figure 1. A taurodont tooth. Blue arrow is point A (the lowest point at the occlusal end of the pulp chamber), yellow arrow is point B (the highest point at the apical end of the pulp chamber), red arrow is the apex of the longest root.

In this study, 3813 molar teeth of 936 patients (58% were female and 42% were male) were assessed. Taurodontism was present in 622 (16%) of these teeth. In 410 (66%) cases, the taurodontism affected the maxilla, and it affected the mandibles in 212 (34%) cases (Table 1).

Taurodontism occurred in 75 (12%) first molar teeth (56 cases of hypo-taurodontism, 17 cases of meso-taurodontism and two cases of hyper-taurodontism), 266 (43%) second molar teeth (193 cases of hypo-taurodontism, 46 cases of meso-taurodontism and 27 cases of hyper-taurodontism) and 281 (45%) third molar teeth (152 cases of hypo-taurodontism, 77 cases of meso-taurodontism and 52 cases of hyper-taurodontism) (Table 2).

Table 1. Prevalence of taurodontism according to localization

	First molar teeth	**Second molar teeth**	**Third molar teeth**
Upper jaw	55	185	170
Lower jaw	20	81	111

Table 2. Prevalence of taurodontism according to type of teeth .

	Hypotaurodontism	**Mesotaurodontism**	**Hypertaurodontism**
First molar teeth	56	17	2
Second molar teeth	193	46	27
Third molar teeth	152	77	52

Discussion

The material used in this study consisted of the orthopantomographs of patients who were between 15 and 65 years and visited the clinic of the Endodontic Department at the Faculty of Dentistry, Ordu University, Ordu, Turkey. The orthopantomographs of all patients who visited the faculty for the first time were. The dental faculty provides dental services to a patient population from numerous parts of the city and its surroundings. However, the sample does not represent a random sample of the Turkish population. Therefore, it is not possible to extrapolate the results to the general population.

In a study of a Chinese adult population conducted, MacDonald-Jankowski et al. (1993) found that the prevalence of taurodontism in 1093 teeth of 196 patients was 21.7% in patient. Another study reported that the prevalence was 48% in 150 patients and 18.8% in 1027 teeth in a Senegalese black adult population (Sarr et al., 2000). In a study of an adult population in Northern Sweden, the prevalence of taurodontism was 0.3% in 739 patients (Backman and Wahlin, 2001). In a study conducted in Turkey, Çelikoğlu et al. (Çelikoğlu et al., 2010) found that the prevalence of taurodontism was 4.5% in 1324 patients. In our study of 936 patients and 3813 teeth, taurodontism was found in 16% (622 teeth) of the teeth.

The application of root canal treatment to a tooth with taurodontism is a very difficult operation for practitioners because of the vertically elongated and wide pulp chambers, apical displacement of the pulpal floor and root canal entrances, differences in the root canal configuration and the possibility of extra canals. There are two different ideas about the access cavity in root canal treatment in cases of taurodontism (Tsesis, 2003). According to Shifman et al. (Shifman and Buchner, 1976) the canal entrances can be found easily because the pulpal floor is not influenced from reactional dentine. Conversely, Durr et al. (1980) suggested that the displacement of root canal entrances presents a difficulty during instrumentation and filling the root canals. In addition, they reported that it is difficult to remove all the necrotic pulp residue from the pulp chamber due to its high volume. In addition, the high volume of the pulp chamber makes it difficult to remove necrotic pulp residue.

Therefore, more time and effort are needed for irrigation. Another study reported that the ultrasonic irrigation method with NaOCl (2.5%) was more effective in removing necrotic pulp residue (Prakash, 2005). Modified filling methods have been recommended for filling root canals when the pulp chamber of taurodont teeth has a complex anatomy (Jafarzadeh et al., 2008). One study recommended that the lateral compaction method should be used to fill root canals, and the vertical compaction method should be employed to fill the pulp chamber (Jafarzadeh et al., 2008). With a view to prosthetic treatment, post-placement is not recommended for the reconstruction of a taurodont tooth (Tsesis, 2003). A taurodont tooth offers a favourable prognosis from a periodontal point of view because there is no furcation involvement until after significant destruction of periodontal tissue (Shifman and Buchner, 1976).

Conclusion

Taurodontism was a frequent anomaly in a north Anatolian dental patient subpopulation. The frequency of this anomaly may vary in different ethnic groups. To determine the prevalence of taurodontism in the Turkish population, additional studies are needed with greater numbers of patients.

Informed Consent: Written informed consent was obtained from patients who participated in this study.
Peer-review: Externally peer-reviewed.
Author Contributions: Concept FC, EBC; Design FC; Supervision FC, YAB; Materials – FC, YAB; Data Collection and/or Processing – FC, YAB; Analysis and/or Interpretation – FC, EBC; Literature Review – FC, EBC; Writing - FC; Critical Review – FC, YAB, EBC.
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References

Backman B, Wahlin YB. Variations in number and morphology of permanent teeth in 7-year-old Swedish children. Int J Paediatr Dent. 2001; 11(1): 11-7.

Çelikoğlu M, Miloglu Ö, Öztek Ö, Kamak H, Kazanci F, Oktay H. The Frequency of Taurodontism in an East Anatolian Orthodontic Patient Population. Turkiye Klinikleri J Dental Sci 2010; 16(3): 214-7.

Durr DP, Campos CA, Ayers CS. Clinical significance of taurodontism. J Am Dent Assoc. 1980;100(3):378-81.

Jafarzadeh H, Azarpazhooh A, Mayhall JT. Taurodontism: a review of the condition and endodontic treatment challenges. Int Endod J. 2008; 41(5): 375-88.

MacDonald-Jankowski DS, Li TT. Taurodontism in a young adult Chinese population. Dentomaxillofac Radiol. 1993; 22(3): 140-4.

Prakash R, Vishnu C, Suma B, Velmurugan N, Kandaswamy D. Endodontic management of taurodontic teeth. Indian J Dent Res. 2005; 16(4): 177-81.

Sarr M, Toure B, Kane AW, Fall F, Wone MM. [Taurodontism and the pyramidal tooth at the level of the molar. Prevalence in the Senegalese population 15 to 19 years of age]. Odontostomatol Trop. 2000; 23(89): 31-4.

Shifman A, Buchner A. Taurodontism. Report of sixteen cases in Israel. Oral Surg Oral Med Oral Pathol. 1976; 41(3): 400-5.

Shifman A, Chanannel I. Prevalence of taurodontism found in radiographic dental examination of 1,200 young adult Israeli patients. Community Dent Oral Epidemiol. 1978; 6(4): 200-3.

Terezhalmy GT, Riley CK, Moore WS. Clinical images in oral medicine and maxillofacial radiology. Taurodontism. Quintessence Int. 2001; 32(3): 254-5.

Tsesis I, Shifman A, Kaufman AY. Taurodontism: an endodontic challenge. Report of a case. J Endod. 2003; 29(5): 353-5.

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ORIGINAL ARTICLE

The Relationship between Maternal, Placental and Newborn Parameters

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Abstract

Objective: The aim of this study was to investigate the relationship between maternal, placental and newborn parameters.

Methods: The study was conducted in the delivery unit, Ordu province, Turkey. The sample consisted of 104 women who had agreed to participate in the research and whose pregnancy had reached 37 weeks or over. Only singleton births were included. The placental and newborn parameters were measured after delivery.

Results: We found that the mean placental weight was 563.6±135.65 grs, and the mean of newborn weight was 3358±487.58 grs. The placental weight was significantly positively correlated with infant's birth weight (p=.000), infant's length (p=.024), maternal weight before pregnancy (p=.021), maternal weight on last day of pregnancy (p=.002) and maternal Body Mass Index (BMI) (p=.015) The placental weight of smoker during pregnancy was 628.82±107.40 grams; placental weight of non-smoker during pregnancy was 550.91±137.44 grams, and the difference was statistically significant (p=.007). The infant's weight was significantly negatively correlated with the number of cigarettes smoked each day during pregnancy (p=.042). It was also significantly positively correlated with the infant's placental weight (p=.000), length (p=.000), head circumference (p=.004), chest circumference (p=.000), and gestational week (p=.001). In addition to, it was significantly positively correlated with the maternal weight before pregnancy (p=.002), maternal BMI before pregnancy (p=.007), maternal weight on the last day of pregnancy (p=.000), and maternal BMI on the last day of pregnancy (p=.002).

Conclusion: In conclusion, we determined that the placenta is an indicator of fetal growth. Also, maternal BMI has an effect on the newborn's weight. Maternal smoking during pregnancy was associated with an increase in placental weight as well as a decrease in an infant's weight.

Key words: Maternal parameters; maternal BMI; maternal smoking; placental weight; birth weight; newborn parameters.

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Introduction

Placenta structure and function are important for maternal and fetal health during pregnancy and in later life of newborn. Studies have revealed that abnormal placental growth is associated with adverse pregnancy outcomes (Wallace et al., 2004; Baptiste-Roberts et al., 2008; Altuncu et al., 2008). Other studies on the human placenta refer to the relationship between placental, maternal, and neonatal factors such as birthweight (Kırimi and Pençe, 1999; Zeyneloğlu et al., 1999; Little et al., 2003), fetal malnutrition (Bleker et al., 2006; Altuncu et al., 2008), anemia (Lao et al., 2000), gestational diabetes (Madazlı et al., 2007), chronic diseases (Üstün and Malatyalıoğlu, 1990; Kırimi and Pençe, 1999; Lindley et al., 2000), maternal body mass index and ethnicity (Sivarao et al. 2002). Furthermore, abnormal placental weight is correlated with chronic diseases in later life such as cardiovascular disease, hypertension and diabetes (Barker et al. 1990; Wills et al., 1996; Barker, 1998; Godfrey 2002).

Birth weight/placental weight ratio has been correlated with perinatal morbidity and mortality (Barker et al., 1990). The effects of maternal risk factors on placental weight and birth weight have been previously studied (Jaya et al., 1995; Williams et al., 1997; Karim and Mascie-Taylor, 1997; Sivarao et al., 2002) and because a relationship between birth weight and later chronic disease has been found, more focus should be placed on the importance of placental and fetal health.

In this study, we investigated the relationship between maternal, placental and newborn parameters.

Materials and Methods

Setting and Sample

The study was conducted in the delivery unit, Ordu province, Turkey. The sample consisted of 104 women who had agreed to participate in the research and whose pregnancy had reached 37 weeks or over. Only singleton births were included.

Data collection

The data were collected in two stages. Data from the mother were taken before birth, and the placenta and the newborn data were collected after the birth. The data were collected using a questionnaire form, and a digital scale with sensitivity and a tape measure were used to measure the placenta.

Collection of maternal characteristics

The questionnaire identified the mother's socio-demographic characteristics and gave information about the latest pregnancy, placenta and newborn. It also included questions about maternal socio-demographic characteristics such as age, education level, occupation, husband's education level and occupation, family type, place of residence, family income, and where they live. Additional information requested included maternal obstetric characteristics and data about pregnancy such as number of parity; number of abortions, number of children; pre-pregnancy weight; current weight and height; time of last menstrual period; diseases during pregnancy; admissions to hospital during pregnancy for illness; if medicines used to correct anemia; diet habits during pregnancy; number of doctor visits during pregnancy; smoking before and during pregnancy; whether violence/trauma had occurred during pregnancy; whether this pregnancy was planned or wanted; whether psychological problems existed during pregnancy; whether the mother had been informed about the sex of the child to be born; whether the mother had negative feelings about the sex of the child to be born; and the time of delivery and delivery type and infant's sex.

Collection and measurements of placental and infant's parameters

Placenta was collected from patients who had delivered between 37 weeks and above the gestational age. The umbilical cord was clamped after delivery to minimize blood loss from the fetal vasculature and was enclosed in a bag. The placenta was trimmed after tying the umbilical cord and was cut 2 cm above the point where it was tied off. The placenta's membrane was cut immediately after birth and weighed after thoroughly wiping it to drain excessive fluid, mucous and maternal blood. The scale was used to measure the infant's weight and placental weight in the maternity room. The placenta's weight and infant's weight were measured with a Soehnle brand digital scale. Infant's length was measured with an infantometer, and head circumference and chest circumference were measured with a tape measure.

Ethical statement

Before the study could begin, permission was obtained from the institution, and the participants were then invited to participate in the study. They were also informed by the researchers and through an approval protocol that they would not be

paid for their participation. The researchers guaranteed participants that their identities and answers would be kept confidential. The study conformed to the principles of the Declaration of Helsinki.

Statistical methods

Descriptive statistics including mean, median, standard deviation, frequency, and percentage were used for demographic, obstetric, placental and infant data. The Pearson correlation analysis test, Mann-Whitney U test, Kruskal Wallis test and t test were used to analyse the correlation between dependent and independent variables. A level of $p<0.05$ was considered as statistically significant.

Results

Maternal, placental and newborn characteristics

The number of mothers invited to participate was 104, and the mean age of mothers at their child's birth was 27.2 years (range 18-40 years). Table 1 shows maternal characteristics. The mean gestational age was 39.1 weeks. The mean weight before pregnancy of the mother was 61.4 kgs; the mean weight gain during pregnancy was 14.3 kgs; and the mean height of mothers was 162.5 cms. The Body Mass Index (BMI) mean for mothers before pregnancy was 23.2 and the maternal BMI mean at the end of pregnancy was 28.6.

Data gathered for this study revealed the following: 21.2% of mothers had smoked before pregnancy; 16.3% of them continued smoking during pregnancy. The mean placental weight of smoker mothers during pregnancy was 628.82±107.40 grams; mean placental weight of non-smoker mothers during pregnancy was 550.91±137.44 grams. Analysis of these characteristics found that maternal smoking during pregnancy was associated with increased placental weight, and the difference was statistically significant (p=.007), (see Table 3). The placental weights and newborn weight of mothers who had violence or trauma during pregnancy, had planned the pregnancy, had no psychological problems during pregnancy, knew the sex of their baby during the pregnancy and were pleased about it, and gave birth at term were higher than others; but the differences between the groups were not found to be statistically significant (p>0.05). Increased birth weight was found in women giving birth via caesarean section and when the infant's sex was male, but the difference between the groups was not statistically significant (p>0.05) (see Table 2).

Placental and newborn characteristics

Placental and newborn parameters are summarized in Table 3. The mean placental weight was 563.6 grs; mean infant's birth weight was 3358 grs; mean neonatal length was 49.5 cms; mean head circumference was 34.2 cms; mean chest circumference was 36.5 cms; mean placental weight/birth weight rate was 0.16; and the mean infant's apgar score was 8.2 (in 1st minute). The correlations between placental weight and birthweight, maternal, placental and infant parameters were examined.

Placental weight was significantly positively correlated with infant's birth weight (r=.440, p=.000), infant's length (r=.222, p=.024), maternal weight before pregnancy (r=.225, p=.021), maternal weight in last day of pregnancy (r=.295, p=.002), and maternal BMI in the last days of pregnancy (r=.238, p=.015) (see Table 4).

The infant's weight was significantly negatively correlated with the number of cigarettes smoked each day during pregnancy (r=-.052, p=.042). It was also significantly positively correlated with the infant's placental weight (r=.440, p=.000), length (r=.497, p=.000), head circumference (r=.277, p=.004), chest circumference (r=.464, p=.000), gestational week (r=.314, p=.001). In addition to, it was also significantly positively correlated with the maternal weight before pregnancy (r=.306, p=.002) , maternal BMI before pregnancy (r=.265, p=.007), maternal weight in the last day of pregnancy (r=.354, p=.000), and maternal BMI in the last day of pregnancy (r=.300, p=.002) (see Table 5).

Table 1. Maternal characteristics's mean, SD, median and range values

Maternal characteristics	Mean	SD	Range
Age mean	27.2	5.05	18-40
Number of pregnancy	2.1	1.29	1-6
Number of abortion (n=22)	1.4	0.79	1-4
Number of child	1.7	0.85	1-4
Weight before pregnancy (kg)	61.4	11.29	40-93
Height mean (cm)	162	6.14	1.50-1.75
Maternal pre-pregnancy BMI	23.2	3.71	14.19-33.35
Weight gain during pregnancy (kg)	14.3	5.79	2-31
Gestational week mean	39.1	0.86	37-40
Visit number to doctor at pregnancy	8.0	3.83	0-25
Period of smoking (year)	7.9	5.14	1-22
Cigarette number at pregnancy (day)	6.4	6.8	1-20
Learn time of foetal sex at pregnancy (m)	4.4	1.1	3-9

Table 2. Placenta weight mean according to maternal, newborn characteristics (n=104)

Variables	n	%	Placenta weight mean±Sd	P Value
Cigarette smoke				
Yes	22	21.2	590.00±136.69	M-WU=773.000
No	82	78.8	556.58±135.33	p=.304
Cigarette smoking during pregnancy				
Yes	17	16.3	628.82±107.40	M-WU=435.000
No	87	83.7	550.91±137.44	p=.007
Violence during pregnancy				
Yes	8	7.7	511.25±152.82	M-WU=321.500
No	96	92.3	568.02±134.09	p=.446
Desirability of pregnancy				
Yes	77	74.0	563.89±139.66	M-WU=1021.500
No	27	26.0	562.96±126.02	p=.894
Birth type				
Caesarean section	86	82.7	559,65±138.68	M-WU=686.000
Spontaneous delivery	18	17.3	582,77±121.88	p=.449
Sex of newborn				
Female	62	59.6	571.61±142.33	t=.725 df=102
Male	42	40.4	551.90±125.89	p=.470

Table 3. Mean, standard deviation, range of placental and newborn parameters

Placental and newborn parameters	Mean	Sd	Range
Placental weight (g)	563.65	135.65	290-990
Placental weight/birth weight	0.16	0.03	0.09-0.31
Birth weight (g)	3358	487.58	2000-4800
Neonatal length (cm)	49.56	2.89	30-55
Head circumference (cm)	34.24	3.19	24-43
Chest circumference (cm)	36.55	4.53	26-52
Newborn apgar score	8.27	0.52	7-10

Table 4. Correlations between placenta weight with maternal and newborn variables

Maternal and newborn variables	Correlations
Maternal weight before pregnancy	r= ,225 p=,021
Maternal weight in last day of pregnancy	r= ,295 p=,002
Maternal BMI in the last days of pregnancy	r=.238, p=.015
Number of cigarettes smoked during pregnancy	r=-.052, p=.042
Newborn's birth weight	r= ,400 p=,000
Newborn's length	r= ,222 p=,024

Table 5. Correlations between newborn weight with maternal and fetal variables

Maternal and newborn variables	Correlations
Cigarette number at pregnancy (day)	r=-.052, p=.042
Maternal weight before pregnancy	r=.306, p=.002
Maternal pre-pregnancy BMI	r=.265, p=.007
Maternal weight in the last day of pregnancy (kg)	r=.354, p=.000
Maternal BMI in the last day of pregnancy	r=.300, p=.002
Newborn's length	r=.497, p=.000
Newborn's head circumference	r=.277, p=.004
Newborn's chest circumference	r=.464, p=.000
Gestational week	r=.314, p=.001

Discussion

We evaluated the associations between maternal, placental and newborn parameters. The mean placental weight was found at 563.6±135.65 grs, and the mean of newborn weight was 3358±487.58 grs. Similarly, Sanin et al. found that the average birth weight was 3369 ± 445 grs, and the average placenta weight was 537±96 grs (Sanin et al., 2001). Benirschke and Kaufmann reported the mean placenta weight at 38 weeks gestation as 470 grs without the cord and membrane; Petekkaya et al. found the mean placental weight as 445.14±88 grs. The weight of placentas in our study was greater than the last two studies (Benirschke and Kaufmann, 2000; Petekkaya et al., 2011). The reason for this was possibly because the population characteristics, ethnicity and method differences of these studies can be associated with lower placenta weights.

The majority of maternal risk factors were associated with either a hypertropic or restrictive adaptive growth response of the placenta (Baptiste-Roberts et al., 2008). Maternal smoking during pregnancy is known to affect fetal growth and the placenta, increasing the risk of giving birth to a small for gestational-age infant (Kramer, 1987; Miller and Jekel, 1989).

e potential effects of smoking during pregnancy on lung and airway development may include structual alterations (Collins et al., 1985). A marked reduction in fetal movements has been reported for at least an hour after the mother has smoked (Thaler et al., 1980). Nicotine may act as a vasoconstrictor, resulting in reduced placental blood flow, reduced supply of nutrients and oxygen to the fetus, and growth retardation and placenta grows and spreads over a wider area (Collins et al., 1985; Üstün and Malatyalıoğlu, 1990). We found that 21.2% of mothers had smoked before pregnancy, and 16.3% of them continued smoking during pregnancy. Furthermore, the placenta weight of babies whose mothers had smoked during pregnancy was higher than for nonsmokers. The placenta weights between smoking and nonsmoking mothers were significant different (p=0.007). In this study, birth weight correlated negatively with the number of cigarettes smoked in a day during pregnancy

(p=.042). Similarly, Üstün and Malatyalıoğlu (1990) reported that the placental weight of smoking mothers was 604±11.84 grams, whereas the placental weight of non-smoker mothers was 553±22.86 grams and the difference was significant. It also accounts for lower birthweights and an increase in placental weight and ratio to birthweight of placental weight (Üstün and Malatyalıoğlu, 1990). Alp et al. (1995) shown that as the number of cigarettes smoked by mothers during pregnancy increased, birth weight decreased, and placental weight did not change. Kırımi and Pençe indicated that smoker mothers delivered babies with significantly lower birth and placental weight when compared to the group of nonsmokers (Kırımi and Pençe, 1999). The results of this study are similar to the results of some; they also differ from others reported in the related literature (Üstün and Malatyalıoğlu, 1990; Alp, 1995; Kırımi and Pençe, 1999).

We determined positively significant correlations between placental weight and infant's birth weight, length (p=.024), maternal weight before pregnancy, maternal weight in the last days of pregnancy, and maternal BMI in the last days of pregnancy.

We found that the newborn's weight was significantly negatively correlated with the number of cigarettes smoked each day during pregnancy. In addition, the newborn's weight was significantly positively correlated to the infant's placental weight, length, head circumference, chest circumference, and gestational week. It was also significantly positively correlated with the maternal weight before pregnancy, maternal BMI before pregnancy, maternal weight in the last days of pregnancy, and maternal BMI on the last day of pregnancy.

Previous studies have found positive correlations among placental weight, newborn's weight (Zeyneloğlu et al., 1999; Sanin et al., 2001; Sivarao et al., 2002; Little et al., 2003), and newborn's height (Sanin et al., 2001). Zeyneloğlu et al.(1999) indicated that there were significant correlations between placental weight and newborn weight and placental diameter and newborn weight; placental weight and height of the newborn were significantly correlated; but there was no relationship between maternal weight and maternal weight gain during pregnancy. Lo et al.(2002) stated that there was a positive correlation between placenta weight and newborn weight, and newborn height. Alwasel et al.(2010) reported that high maternal body mass index was associated with a high placental ratio (placental weight/birth weight) at birth. Sanin et al. (2001) revealed that for each gram increase in placental weight, birth weight increased by 1.98 g.; placental weight has a nonlinear relation to the birth weight and is an important predictor of birth weight. Petekkaya et al. (2011) reported that only the relationship between placental weight and newborn weight was found to be statistically significant ($r=0.543$, $p<0.001$); no statistically significant relationship was found among placental weight and the age of the mother, number of births, newborn gender and height.

Conclusion

In conclusion, we found correlations between maternal, placental and infant parameters. The placental weight and maternal BMI have been shown to exert an effect on the newborn's weight. Maternal smoking during pregnancy was associated with an increase in placental weight as well as a decrease in an infant's weight. While the placenta is often weighed after delivery as a matter of routine in many delivery suites, little attention is usually paid to the relationship between placental weight and clinical complications, the common exception being when there is suspicion of retained placental tissue in the uterus and the low placental weight may provide a clue (Lao, 1998).

Results of our study strongly indicate that the relationship between placental, maternal, and newborn characteristics, both during pregnancy and after the child is born, may have a significant impact on the future health of the mother and the child. Therefore, the importance of increasing awareness of this issue among health care professionals is highly recommended.

Several limitations of our study are: The

mothers' pre-pregnancy weight was obtained by self-report. Although self-reported and measured weights tend to be correlated, women generally tend to underestimate their weight. There was a measurement error in the assessment of the placental growth measurement. There may also be some differential validity in the measurement placental diameter with regard to placental shape used in the estimation of placenta surface area.

Informed Consent: Verbal informed consent was obtained from patients who participated in this study.
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References

Alp H, Selimoğlu MA, Yaman S, Energin M, Altınkaynak S, Orbak Z. The effects on fetus of cigarette smoking during pregnancy. İst Çocuk Klin Derg 1995;30:80-83.

Altuncu E, Akman İ, Kotiloğlu E, Başgül A, Yurdakul Z, Demir F, Kavak Z, Baş E, Bozkurt N, Bilgen H, Özek E. The relationship of placental histology to pregnancy and neonatal characterisitcs in preterm infants. J Turkish-German Gynecol Assoc 2008;9:1-7.

Alwasel SH, Abotalib Z, Aljarallah JS, Osmond C, Alkharaz SM, Alhazza IM, Badr G, Barker DJ. Changes in placental size during Ramadan. Placenta 2010;31:607-10.

Baptiste-Roberts K, Salafia CM, Nicholson WK, Duggan A, Wang NY, Brancati FL. Maternal risk factors for abnormal placental growth: the national collaborative perinatal Project. BMC Pregnancy and Childbirth 2008;8:2-7.

Barker DJ, Bull AR, Osmond C; Simmonds SJ. Fetal and placental size and risk of hypertension in adult life. BMJ 1990;30:259-62.

Barker DJ. In utero programming of chronic disease. Clin Sci (Lond) 1998;95:115-28.

Benirschke K, Kaufmann P. Anatomy and pathology of the umbilical cord and major fetal vessels. Benirschke K, Kaufmann P, editors. Pathology of Human Placenta, Springer-Verlag, New York, 2000.p. 319-77.

Bleker OP, Buimer M, van der Post JA, van der Veen F. Ted (G.J) Kloosterman: on intrauterin growth.The significance of prenatal care. Studies on birth weight, placental weight and placental index. Placenta 2006;27:1052-54.

Collins MH, Moessinger AC, Kleinerman J, Bassi J, Rosso P, Collins AM, James LS, Blanc WA. Fetal lung hypoplasia associated with maternal smoking: a morphometric analysis. Pediatr Res 1985;19:408-412.

Godfrey KM. The role of the placenta in fetal programming-a review. Placenta 2002;23:20-7.

Jaya DS, Kumar NS, Bai LS. Anthropometric indices, cord length and placental weight in newborns. Indian Pediatr 1995;32:1183-88.

Karim E, Mascie-Taylor CG. The association between birthweight, sociodemographic variables and maternal anthropometry in urban sample from Dhaka, Bangladesh. Ann Hum Biol 1997;24:387-401.

Kırımi E, Pençe S. The affects of smoking during pregnancy to fetus and placental development. Van Medical Journal 1999;6:28-30.

Kramer MS. Determinants of low birth weight: methodological assessment and meta-analysis. Bull World Health Organ 1987;65:663-737.

Lao TT. Placental ratio and fetal growth. HK J Paediatr, 1998;3:29-31.

Lao TT, Tam KF, Chan LY. Third trimester iron status and pregnancy outcome in non-anaemic women; pregnancy unfavourably affected by maternal iron excess. Hum Reprod 2000;15:1843-48.

Lindley AA, Becker S, Gray RH, Herman AA. Effect of continuing or stopping smoking during pregnancy on infant birth weight, crown-heel length, head circumference, ponderal index, and brain:body weight ratio. Am J Epidemiol 2000;152:219-25.

Little RE, Zadorozhnaja TD, Hulchiy OP, Mendel NA, Shkyryak-Nyzhnyk ZA, Chyslovska N, Gladen BC. Placental weight and its ratio to birthweight in a Ukrainian city. Early Hum Dev 2003;71:117-27.

Lo YF, Jeng MJ, Lee YS, Soong WJ, Hwang B. Placental weight and birth characteristics of healthy singleton newborns. Acta Paediatr Taiwan 2002;43:21-25.

Madazlı R, Tüten A, Calay Z. Evaluation of placentas in pregnancies with diabetes mellitus. Turkiye Klinikleri J Gynecol Obst 2007:89-93.

Miller HC, Jekel JF. The epidemiology of white full-term infants with short crown-heel lengths for gestational ages at birth. Yale J Biol Med 1989;62:1-12.

Petekkaya E, Deniz M, Yildiz E. Analysis of the relationship between umblikal cord, placental morphology and anthropometric measurements of the newborn. Pak J Med Sci 2011;27:569-73.

Sanin LH, Lopez SR, Olivares ET, Terrazas MC, Silva MA, Carrillo ML. Relation between birth weight and placenta weight. Biol Neonate 2001;80:113-17.

Sivarao S, Vidyadaran MK, Jammal AB, Zainab S, Goh YM, Ramesh KN. Weight, volume and surface area of placenta of normal pregnant women and their relation to maternal and neonatal parameters in Malay, Chinese and Indian ethnic groups. Placenta 2002;23:691-96.

Thaler I,Goodman JD, and Dawes GS. Effects of maternal cigarette smoking on fetal breathing and fetal movements. Am J Obstet Gynecol 1980;138:282-87.

Üstün C, Malatyalıoğlu E. The effects of smoking on fetus-placenta during pregnancy. Ondokuz Mayıs University Tıp Fakültesi Dergisi 1990;7:43-48.

Wallace JM, Aitken RP, Milne JS, Hay WW Jr. Nutritionally-mediated placental growth restriction in the growing adolescent: consequences for the fetus. Biol Reprod 2004;71:1055-62.

Williams LA, Evans SF, Newnham JP. Prospective cohort study of factors influencing the relative weights of the placenta and the newborn infant. BMJ 1997;314:1864-18.

Wills J, Watson JM, Hales CN, Phillips DI. The relation of fetal growth to insulin secretion in young men. Diabet Med 1996;13:773-74.

Zeyneloğlu HB, Kuşçu E, Tarım E, Duran H, Ergeneli MH, Batıoğlu S. Placental parameters and fetal outcome: implications on routine evaluation of placental histology. T Klin J Gynecol Obst 1999;9:31-36.

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CASE REPORT

Double Balloon Angioplasty in a Patient with Right Coronary Artery Ectasia

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Abstract

Coronary artery ectasia (CAE) is an abnormality of the coronary anatomy and might be a variant of the cCoronary Artery Disease (CAD). The CAE can cause angina pectoris and even MI with vasospasm, dissection, or thrombus in patients without CAD. Isolated CAE is defined as CAE without significant coronary artery stenosis. The mechanisms responsible for ectasia formation are not clearly known. However, the histopathological changes in CAE are shown to be similar to the changes that are observed in atherosclerotic lesions and they include intimal–medial degeneration and hyalinization. There is no current guideline for percutaneous coronary angioplasty in stenotic ectatic coronary arteries due to variations in coronary anatomy. We report successful simultaneous double balloon angioplasty in a patient who had coronary artery ectasia.

Key Words: double balloon angioplasty, coronary artery ectasia, coronar intervention

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Introduction

Coronary artery ectasia (CAE) is the localized or diffuse dilation of the coronary arteries exceeding the 1.5-fold of a normal adjacent segment on coronary angiography. (Swage et al., 1983) Coronary artery ectasia is an abnormality of the coronary anatomy. As half of the patients with CAE have coronary artery disease (CAD), some writers believe that CAE is a variant of the CAD. In several studies, patients with CAE have been shown to have increased risk of mortality, equivalent to the patients with CAD (Turgay et al., 2012).

The right coronary artery is the most commonly affected, followed by the left circumflex or left anterior descending artery (Hartrel et al., 1985). Coronary artery ectasia is frequently associated with high-burden thrombus formation, which has a significantly adverse outcome after primary percutaneous coronary intervention (Yip et al., 2002). CAE also remains as a challenge during primary PCI. Optimal stent apposition cannot be achieved easily in CAE due to the necessity of larger stent use with higher deployment pressures. We report here a case of right CAE treated with simultaneous double balloon angioplasty for optimal stent apposition.

Case

A 50-year-old male patient presented to the emergency unit because of a compressive chest pain started 1 hour ago. The electrocardiography (ECG) applied in the emergency unit revealed ST elevation of 2 mm in DII-III-aVF leads. Arterial blood pressure was 110/70 and pulse was 75/min. The patient was transferred to the catheter laboratory for primary angioplasty. Coronary angiography demonstrated non-critical stenosis in LAD and Cx, whereas RCA was occluded proximally with severe thrombotic burden (fig.1-a). The lesion site was predilated with a 3.0 x 15 mm balloon; however, distal flow could not be restored. Despite efforts aiming to aspirate the thrombus in RCA via aspiration catheter, we failed to aspirate an adequate amount of the thrombus. Thereafter, right diagnostic catheter was extended carefully in the right coronary artery and by applying a negative pressure with a 50 cc injector, a large amount of the thrombus was aspirated. The lesion in RCA was predilated with 3.0 x 15 balloon (15 atm) (Sprinter balloon, Medtronic) and distal flow was restored (fig.1-b).

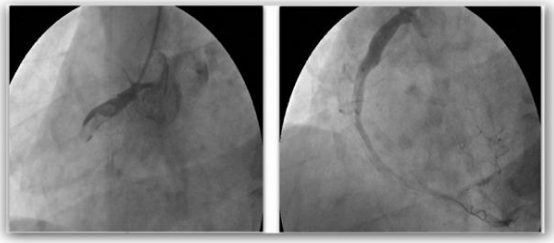

Figure 1: (a) Initial coronary angiogram revealing occluded RCA, (b) RCA after thrombus aspiration and balloon predilatation

A stent of 5.0 x 18 mm (22 atm) (Driver stent, Medtronic) was implanted in the lesion, however, because of the occurrence of a dissection proximal to the lesion, another stent of 5.0 x 12 stent (22 atm) (Driver stent, Medtronic) was implanted. Despite the successful implantation process, the stents were judged to be undersized relative to the vascular diameter. Therefore, we used two compliant balloons of 3.0 x 24 mm (Sprinter balloon, Medtronic) to postdilate the area between the two stents (max. 24 atm) (fig.2-a). We ended the procedure after concluding that optimal stent apposition was achieved (fig.2-b).

The patient was followed up by medical therapy and discharged uneventfully in a healthy condition

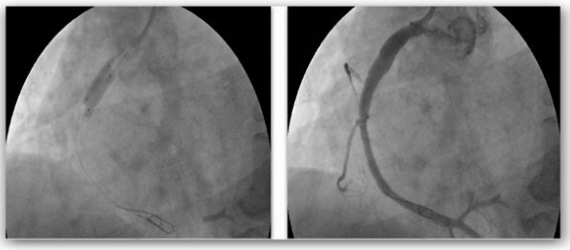

Figure 2: (a) Double balloon angioplasty for postdilatation (b) Final coronary angiogram

Discussion

We performed a successful post-dilatation using double balloon method to achieve optimal outcome after primary stenting in our patient who had a significantly large right coronary artery, and no adverse complication was observed.

Coronary vascular interventions using new materials and techniques have allowed reperfusion of complex vascular lesions. Despite developments in coronary stent and balloon technologies, coronary angioplasty may not prove to be effective due to variations in coronary anatomy. In cases with tortuous and large vessels, physicians still fall short of achieving adequate outcomes. There is still no consensus about the treatment of such cases. In a previous case report, a successful outcome was observed after the achievement of an adequate double balloon dilatation in a patient with a large and tortuous right coronary artery (Baron and Nielson, 2008). Our patient presented with a large right coronary artery which was treated by implantation of two stents in the proximal lesion. There was a significant difference between the proximal and distal vascular diameters after the procedure. We applied double balloon dilatation in the lesion site in order to achieve a normal blood flow and obtain adequate vascular diameter in the distal stent area. A successful case of simultaneous double stent implantation was also reported (Rha et al., 2009). Although there is only one similar case in the literature using only balloon angioplasty, pre- and post-dilatation angioplasty with double balloons can be a safe method for achieving optimal outcomes, particularly when used carefully in large and tortuous.

Informed Consent: Written informed consent was obtained from patients who participated in this study.
Peer-review: Externally peer-reviewed.
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References

Baron SB, Nielson C. Double balloon angioplasty for unstentable large-caliber right coronary stenosis. J Invasive Cardiol. 2008; 20: 52-3.

Hartnell GG, Parnell BM, Pridie RB. Coronary artery ectasia. Its prevalence and clinical significance in 4993 patients. Br Heart J. 1985; 54:392–395.

Isık T, Kurt M, Ayhan E, et al. Relation of Red Cell Distribution Width with Presence and Severity of Coronary Artery Ectasia. Clinical and Applied Thrombosis/Hemostasis. 2012; 18: 441-447.

Rha SW,Wani SP,Oh DJ..Parallel stenting using two sirolimus-eluting stents in an ectatic coronary artery stenosis.BMJ Case Rep. 2009; DOI:10.1136 / bcr.2006.099739.

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LETTER TO EDITOR

Spontaneous Breast Hematoma Associated With Warfarin

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Abstract
Today warfarin sodium (Coumadin) is still the most commonly used agent for anticoagulant therapy. Dosage adjustment is very difficult because of many drugs and food interaction thus it can be very easy to overdose. Coumadin can cause bleeding which can be serious and sometimes lead to death. There are many cases in the literature that caused severe bleeding in different parts of the body but there is not spontaneous breast hematoma. We want to present 84-year-old female patient who had warfarin therapy due to pulmonary embolism, atrial fibrillation and right atrial thrombus. She admitted to the emergency department with a 2 day history of swelling and bruising at left breast without a history of trauma.

Key Words: Breast Hematoma, Warfarin, Anticoagulant

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To the editor
84-year-old female patient admitted to the emergency department with a 2 day history of swelling and bruising at left breast. She was discharged with warfarin therapy due to pulmonary embolism, atrial fibrillation and right atrial thrombus 2 months ago. There was no history of trauma and generalized swelling, edema and common ecchymosis of the left breast (Figure 1) were found on physical examination.

Figure 1: Generalized swelling, edema and common ecchymosis of the left breast

Other physical examination findings were unremarkable. At the laboratory examination, hemoglobin (Hb) was determined 8.15 g/dl, prothrombin time (PT) was 58.7 second, internalized normalized ratio (INR) level was 3.3, activated partial thromboplastin time (aPTT) was 50.1 second.

The other laboratory findings were normal. There was edema under the skin and 70x163x124 millimeter (~145 ml) hematoma which containing hypo-anechoic spaces in the left breast at breast ultrasound (U.S.) (Figure 2).

Figure 2: Hematoma in the left breast at breast ultrasound

The patient hospitalized and 4 fresh frozen plasma infusions were administered. In the control laboratory examination Hb was 5.89 g/dl, INR was 4.41, PT was 83.3 second, aPTT was 55.3 second. Ecchymosis and swelling were observed to increase at physical examination. It was found that significant increase in the size of the collection left breast (~60x190x200mm, ~1208 ml) at control US. A thoracic computed tomography scan was performed to evaluate expanding hematoma. Fluid-fluid showing floor leveling and 145x87x219 millimeter hematoma in the left breast (Figure 3), thickening of the left lateral chest wall and the left breast subcutaneous fatty tissue and increased density of left breast were detected. Collection of muscle was not detected muscle was not detected

Patients enrolled in intensive care because of Hb decline, a significant increase in the volume of the left breast, increase in breast ecchymosis and supportive therapy was continued.

Figure 3: Hematoma in the left breast at thoracic computed tomography

Treatment on the 3rd day, Hb was 8 g/dl, INR was 2, PT was 32 second, aPTT was 51.2 second. Total 24 fresh frozen plasma and 9 unit erythrocyte suspension infusion were administered. Vitamin K and tranexamic acid were applied. Treatment on the 7rd day blood count began to be stable (Hb: 10 mg/dl, INR: 1.17 PT: 16.8 min and APTT: 27.9 min). Ultrasonography-guided drainage was performed in patients at 7rd day. Hematoma was 158x73x21 mm at control US 12 days after drainage. Hematoma had shrunk and from bleeding had stopped drainage catheter. Drainage catheter was pulled. With cardiology department proposal low molecular weight heparin was begun. The patient was consulted to the hematology department and diagnosed as acquired bleeding diathesis and was followed.

Coumadın can cause bleeding which can be serious and sometimes lead to death. Today warfarin sodium is still the most commonly used agent for anticoagulant therapy.

Different results were found in studies with warfarin incidence of bleeding in patients. In one of these studies, It has been reported that incidence of mild or severe bleeding rate between 7.6% and 16.5%, incidence of severe or life-threatening bleeding rate of 1.3-2.7 / 100 patients / year (Makris et al.,2010). Warfarin bleeding is more common in the elderly. The reason for this co-morbid diseases, multiple drug use, and endothelial vascular fragility increase with aging. Our patient was 84 years old.

Studies in the literature have shown conflicting results regarding the incidence of bleeding in patients on warfarin. In one of these studies while mild or severe bleeding rates were reported between %7,6 and %16,5, severe or life threatening bleeding rates were 1,3-2,7/100 patient/year (Makris et al., 2010). Bleeding risk due to warfarin usage is more common in the elderly. The reason for this might be co-morbidity which increased with age, increased vascular and endothelial fragility in elderly and multiple drug use (Beyth and Landefeld, 1995). Besides, the present patient was 84 year old.

The literatures reveal numerous reports of acute spinal hematoma, retroperitoneal hematoma, and rectus sheath hematoma, abdominal wall hematoma, sublingual hematoma, supraglottic hematoma ect. secondary to warfarin use (Fujikawa et al.,2011; Martin et al., 2011; Berthelsen et al.,2013;Yuanyuan, 2014;). However, there was no report about spontaneous breast hematoma

Informed Consent: Written informed consent was obtained from the patient who participated in this case.
Peer-review: Externally peer-reviewed.
Author Contributions: Concept – YK; Design- EÇ; Supervision- YK; Data Collection and/or Processing- ABK; Analysis and/or Interpretation - ZYG; Literature Review -OB; Writing -YK; Critical Review -YK
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References

Berthelsen RE, Tadbiri S, Rosenstock CV. Spontaneous sublingual haematoma in a patient treated with warfarin. Acta Anaesthesiol Scand. 2013; 57(4):530-1.

Beyth RJ, Landefeld CS. Anticoagulants in older patients. A safety perspective. Drugs Aging 1995; 6(1):45-54.

Fujikawa T, Kawato M, Tanak A. Spontaneous rectus sheath haematoma caused by warfarin-induced overanticoagulation. BMJ Case Reports 2011; doi:10.1136/bcr.07.2011.4533

Makris M, Van Veen JJ, Maclean R. Warfarin anticoagulation reversal: management of the asymptomatic and bleeding patient. J Thromb Thrombolysis 2010; 29(2): 171-81.

Martin F, D'Costa H, George G. Supraglottic haematoma in a patient taking warfarin. Emerg Med J. 2011 May; 28(5): 453-4.

Yuanyuan J. Spontaneous abdominal wall hematoma caused by abdominal exercise as a complication of warfarin therapy. Chin Med J 2014; 127 (9): 1796