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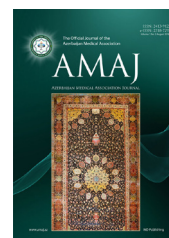
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The Cover

The biggest (56,12 m²) Azerbaijani state-of-the-art "Sheikh Safi" carpet, which was woven in "Lachakturunj" composition in 1539 in Tabriz for Ardabil Mosque. The carpet was made under an order of the Azerbaijani Safavid state founder Shah Ismayil Khatai's son, Tahmasib I. It was bought in Tabriz and brought to London to Victoria and Albert museum in 1893.



Correction

In the case report entitled "Free Floating Thrombus in Right Heart Associated with Pulmonary Embolism: The Effect of Streptokinase" published in August 2016 issue of AMAJ (2016;2:42), there was error in the first sentence of Case Presentation's Case 2 section. The sentence should be started as "A 42-year-old man".

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The Experiences of an Azerbaijani Student to Attainment of Medical Education in United States: From Baku to Charlottesville

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The medical education system in United States is constantly changing. Due to recent healthcare legislation and arising need for physicians, there has been much needed innovations in graduate medical education system. Currently, there are 141 accredited medical doctor (MD)-granting institutions and 31 doctor of osteopathy (DO)-granting medical institutions. Despite of the end goal of reaching Liaison Committee on Medical Education (LCME) accredited postgraduate training program; each institution has its own unique philosophy of graduate medical program. Approaches to learning material and professor selection are also dependent on school's average (United States Medical License Exam) scores as well as the research funding provided by the government.

This article is mainly intended to educate the international students on the pathway that needs to be navigated in order to gain acceptance to medical school and the steps necessary to land a successful post-graduate resident training program. Caution must be taken to not misinterpret these steps as a guide to enter medical residency training after completing medical school abroad as these have different application system and residency selection criteria.

Keywords: training, teaching, curriculum, education

About the Authors

Rauf Shahbazov graduated from the Azerbaijan Medical University and completed general surgery residence in Baku, Azerbaijan. He trained further in King Faisal Hospital in Kingdom of Saudi Arabia and passed required exams for Royal College of Surgeons in Edinburgh. He obtained Diploma of Clinical Surgery in General (known as MRCS Ed), as well as Completion of Surgical Training Certificate from Intercollege Committee of Royal Colleges in United Kingdom. Interest in transplant surgery brought him to the transplant program at Baskent University in Ankara, Turkey. He trained as a transplant surgeon and obtained his European Board of Surgery Diploma in Porto. Rauf Shahbazov is a transplant surgeon who currently works at the University of Virginia Medical Center in Charlottesville.

Feredun Azari is a 4th year medical student attending University of Virginia School of Medicine. He was born in Baku, Azerbaijan in 1991 and attended elementary and middle school prior to moving to Canada and USA. He completed high school in Virginia and matriculated to George Mason University. While at George Mason, he was engaged in multiple events hosted by the Azerbaijani diaspora both locally and within the university community itself. Due to his academic achievements, he was selected for the dean's list during each of the semesters he was matriculated. He obtained the degree in Bachelor of Chemistry prior to matriculating at University of Virginia Health System where he received multiple honors and awards due to his performance during first three years. Feredun is interested in enrolling at a general surgery residency program next year.

Getting into Medical School

The opinions of the American and international public regarding obtaining medical education in the United States and Canada are skewed. This stems from grossly misrepresented career paths, which are portrayed in the media and various television shows. The difference in opinion is even more prevalent amongst those who do not reside in the United States. The purpose of this paper is to lay out a pathway that is taken by an average physician who attains his or her MD/DO degree in United States. Also, there is a unique experiences about the proposals of the education systems in United States, Canada, and Azerbaijan provided by the authors.

Currently, according to Liaison Committee on Medical Education (LCME) and American Association of Colleges of Osteopathic Medicine (AACOM), which accredits medical schools in United States, there are 141 medical doctor (MD) schools and 31 doctor of osteopathy (DO) schools [1,2]. The number of these schools are projected to increase in the near future [3]. In 2013, there was a record: higher than 52,550 applicants and approximately 20,000 first time enrollees in medical schools in United States alone (Figure 1) [4]. Despite these numbers, there are significant insufficiency of physicians in the country which constantly attempted to be addressed by recent healthcare legislatures.

How does the application system differ among different countries? It is imperative to understand that the whole application process in USA and its logistics are completely different than that of Azerbaijani or European system. For example, Azerbaijan Medical University accepts students after completion of secondary high school education and the national entrance exams. The average age of matriculation is eighteen.

Even though, each school differs in their admission requirements, few characteristics remain universal. Most student enrolling in medical school usually have at least a Bachelor's degree

in their field of choice and the presence of Master's degree or Doctoral degree is not uncommon. Given the requirement for particular credits in chemistry, physics, math, and biology; most students pursue degree in biology or chemistry [5]. However, there are no restrictions on the degree pursued with students obtaining diplomas in arts, humanities, and liberal arts as long as they complete the required classes mandated by their medical school of choice. Student's performance during undergraduate years and their accomplishments in classes are the primary determinants of success of entrance to medical school [5,6]. Due to these requirements, the average age of matriculation is in the low to mid 20's at most medical schools. At the time of this paper, the average age of matriculation at author's medical school was 26.8. It is important to note that there are no age limits in the admission process. This allows the individuals with significant work experience to enter the medical field or serve as a pathway to career change.

For students whose English is not the first language or who were born abroad completion of TOEFL examination may be required despite the fact that many entrance exams include critical reading and/or writing as an essential component. This requirement also differs amongst schools.

Usually, during third year of undergraduate education, students take the The Medical College Admissions Test (MCAT), which is a requirement for all US medical schools. The scores attained on this test along with the grades in individual classes determine the competitiveness of an applicant [8]. Average MCAT scores in 2013 were 25.2 amongst the 90,000 who took the exam with average matriculation score of 31.2 [9,14]. Since grading and strength of education differ amongst undergraduate colleges, MCAT serves as a standardized marker for all students to ensure fairness and objective of assessment (Figure 2).

The details of MCAT will not be discussed here as there have been significant overhauls to the exam in the latter part of 2015 with the change of scoring and exam administration.

Apart from grades and test scores, important characteristics of the applicants include their race, extracurricular activities, research experience, publications, state of residence and work/volunteering experience.

Choosing the Medical School

Once all the prerequisites are completed, the decision to chose medical school starts. This is one of the most anxiety provoking times as there no certainty of interview invitations and no information about where one will spend next four years of his/her life.

The first decision that one needs to make is whether to apply to DO or MD schools. What is the difference? DO or Doctor of Osteopathy is relatively unique degree offered by osteopathic schools in the US. Frankly, the knowledge regarding these schools is low in the international level and associated with significant stigma amongst those blinded by ignorance. Graduates with DO degrees have the same ability and opportunities to train at residency programs which are accessible to Allopathic programs (MD). Once they function as a licensed physician they carry the same responsibilities and privileges as an MD partner. Osteo-

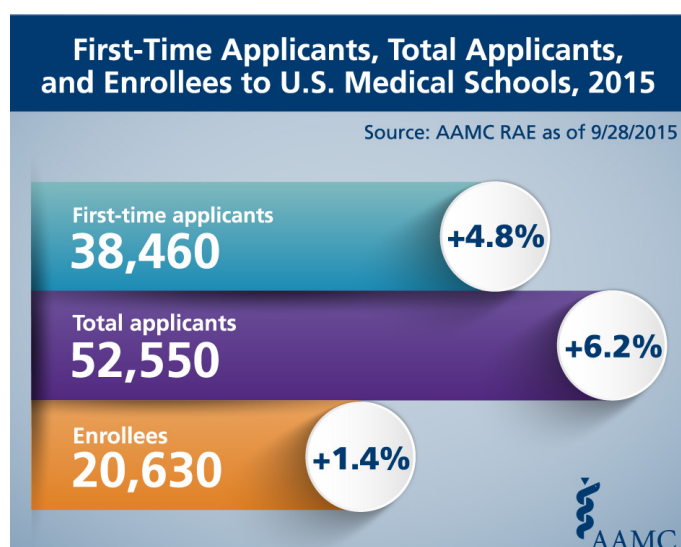


Figure 1.

AAMC data regarding medical school applicants.

Retrieved from: <https://www.aamc.org/newsroom/newsreleases/446400/applicant-and-enrollment-data.html>

Table 1. The demographic differences between medical school students in US and Azerbaijan. Data obtained from AAMC and Azerbaijan State Medical University.

Matriculation Differences Between USA and Azerbaijan					
Country	Age	Prior Degrees	Tuition (per year)	Combined Degrees	Duration of study
USA	24	Yes	\$32,889	Yes	4
Azerbaijan	18	No	\$5000	No	6

pathic schools primarily focus on holistic approach to education and receive a primary care focused training [11]. However, as mentioned previously, they can attain any residency training as they wish.

Once the type of degree is decided, then one needs to consider their academic standing, their state of residence, and the personal desire to live in a particular place. State institutions prefer to accept in-state residents and these students do have a lower tuition rates. However, the state of residency has minimal merit in those applying to private medical universities. So, tuition does come into play in decision making process. As evident on Table 1, average medical school-tuition costs \$50,000 per year. The cost is not a limiting factor as all US citizens and permanent residents are offered government loans to mitigate the costs. One needs to take into account the interest rates and total debt accrued over 20-30 years it takes to repay the loans [12].

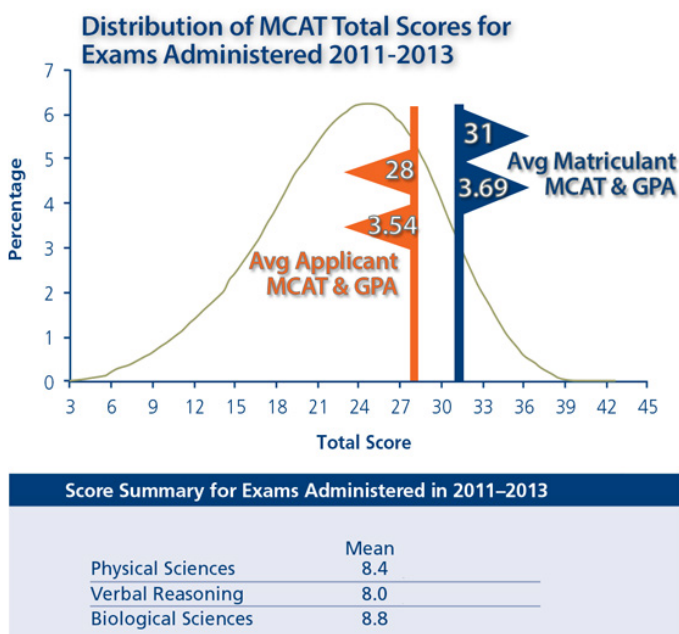


Figure 2.

The average MCAT and Grade Point Average for applicants as well as those who matriculated in medical school. Source: AAMC. Retrieved from: http://blog.trinityschoolof-medicine.org/blog-compare_Caribbean_Medical_Schools/bid/108546/More-Than-an-MCAT-Score-Uncovering-an-Applicants-Potential-at-Trinity-SOM

Applicants do have the ability to apply for combined MD/ PhD, MD/MBA, MD/JD programs. However, the open spots for these programs limited and are competitive (Table 1)

Rest of the process is standardized with interviews at institutions who deem one competitive enough. At the end of the process, the student has to make a selection at a universities which have accepted him or her.

During Medical School

The medical education experienced by each medical student is different. This is primarily due to differing philosophies exhibited by different universities. The examples provided here are from author's personal experience and does not mean to represent or encompass the teaching method of all medical schools. The common theme for all medical students are two years or preclinical studies which are primarily focused on basic sciences. Then in order to start clinical year, most students are required to take and pass USMLE Step 1 (united state medical license examination). In order to graduate, students need to pass both the USMLE Step 2 Clinical Knowledge and the USMLE Step 2 Clinical Skills exam, which are taken during 4th year of medical school. Some residency programs require that you demonstrate a passing score in both before being considered at a program.

Some medical schools, such as the authors', have decided to condense the basic science material into 1.5 years instead of the traditional two years. This allows extra 6 months towards the student's final year to pursue his or her own interest. However, this approach is new and not universal across all schools. The classes are dealt with 12 different systems of the body, which are taught at 4-6 week intervals. During each class, material covered includes relevant pathophysiology, pharmacology, anatomy, and treatment of various diseases. For example, during study of cardiovascular system one would learn about the all above mentioned topics as it relates to that organ unit. Furthermore, there are schools that teach the classical 1st year basic science and anatomy while deferring pathology for second year of medical education.

Furthermore, during the first two years of schooling, the students are required to undergo various simulated clinical scenarios, patient interview technique workshops, and physical exam workshops, which are conducted on a weekly basis [7]. This is meant to prepare the student for actual clinical encounters during third year of medical school. Simulations are done on the latest technologically advanced mannequins which transmit real time physiologic data to the room monitors. The interviews and physical exam preparation are conducted on specifically trained standardized patients. Passing grade are required in order to be able to sit for the USMLE exams.

One would say that one of defining aspects of medical school are the USMLE exams. This is especially true regarding Step 1 exam. Many residency programs invite their potential candidates based on their Step 1 score. Also, the competitive specialties such as orthopedics, plastics, and neurosurgery have a relatively higher score cut offs for their applicants (Table 2) [15]. According to the National Residency Match Program, in 2014, family medicine had average step 1 score of 218 while otolaryngology had

Table 2. NRMP data indicating characteristics of residency applicants. Source: NRMP**Characteristics of residency applicants in 2014**

Measure	U.S. Seniors		Independent Applicants	
	Matched (n=15,127)	Unmatched (n=1,245)	Matched (n=8,633)	Unmatched (n=7,682)
1. Mean number of contiguous ranks	11.5	5.3	6.9	2.8
2. Mean number of distinct specialties ranked	1.2	1.6	1.3	1.5
3. Mean USMLE Step 1 score	230	221	225	213
4. Mean USMLE Step 2 score	243	231	234	220
5. Mean number of research experiences	2.7	2.9	1.8	1.9
6. Mean number of abstracts, presentations, and publications	4.2	3.8	3.6	3.9
7. Mean number of work experiences	3.0	3.0	4.0	4.8
8. Mean number of volunteer experiences	7.1	7.2	4.7	3.7
9. Percentage who are AOA members	16.0	5.8	n/a	n/a
10. Percentage who graduated from one of the 40 U.S. medical schools with the highest NIH funding	32.7	21.5	n/a	n/a
11. Percentage who have Ph.D. degree	3.9	2.6	n/a	n/a
12. Percentage who have another graduate degree	15.2	17.8	n/a	n/a

n/a: The measure either does not apply to, applies to only a small percentage of, or no reliable data were available for independent applicants.

Sources. NRMP Data Warehouse; Top 40 U.S. medical schools with the highest NIH funding in measure 10 is from the NIH website (<http://report.nih.gov/award/index.cfm>)

average score of 248 for the matched applicants [11,12]. Nevertheless, the performance on this exam has future repercussions. For this reason, many medical school offer 6-8 week vacation time intended to study for this exam. It is understandable that international medical graduates might find this stunning as they tend to spend much more months preparing for this exam. However, it is imperative to comprehend that material taught during the first 2 years are intended to prepare for the exam.

Once the student passes the exam, he or she, embarks on one of the most exciting times of their medical training; the hospital ward. During these times, students rotate through Surgery, Internal Medicine, OB/GYN (obstetrics and gynecology) Neurology, Psychiatry, Outpatient Family Medicine, and Pediatric wards either at their home institution or affiliated hospitals in the area. During each rotation, students can experience the subspecialties within each specialty but LCME requires all students to complete the above mentioned rotations in order for the school to be accredited. At the end of each rotation students take a standardized test administered by the National Board of Medical Education (NBME). Passing grade is required for student to be eligible for graduation [15].

After the completion of required clinical rotations, one can choose to further experience specialty of their choosing. This allows the students to find and bond with their mentors who can provide letters of recommendations for residency [15]. There is also significant freedom allowed during 4th year of medical school. Student can choose any rotation he or she wants to participate in and this is further guided by their future career choice.

The purpose of 4th year medical school is to guide them to or confirm their clinical specialty choice. Various programs across different specialties have multiple requirements for the application process. However, these are done through a standardized system and is matter of discussion elsewhere.

Conclusion

The journey to medical school in US is significantly different than that of Azerbaijan. One has to prove that they can handle vigorous academic material through their undergraduate performance. Prior to matriculation, potential student should acquire a Bachelor's degree and complete all the coursework required. Next essential step is to perform successfully on the MCAT examination, which will determine his or her competitiveness at getting accepted to medical school. Once accepted to medical school, student undergoes approximately 2 years of basic science education, which is followed by USMLE Step 1 examination. Scores on Step 1 can determine future career choice but is also dependent on other parameters. During third year students undergo training in the hospital setting and have to complete nationally required clinical rotations. Finally, as a fourth year, students have the freedom to choose their clinical setting and start working towards acceptance for their residency program. The education and training behind medicine is constantly changing and there are new methods employed on a daily basis to ensure success of medical students.

Finally, it is to author's disappointment that the shortage

of Azerbaijani physicians thoroughly evident. At the time of submission of this paper, the author was the only Azerbaijani national who has ever attended his medical institution (in US). Even though, there are no studies documenting the number of Azerbaijani MD's in which institution?? the best estimate that is obtained through collaboration puts the number at low 20's. What is more striking is the fact that the neighboring countries (Turkey, Russia, Iran, Georgia, Armenia) have professional medical associations that are actively organizing events between the native countries and US. Each of those associations have scholarships to support their members financially and organize events to encourage collaboration. Unfortunately, this is lacking from the Azerbaijani physician diaspora. Authors hopes that initiation of collaboration with medical institutions between US and Azerbaijan could help professional development of doctors in globalized world.

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Anesthetic Management of a Parturient with Sequelae of a Severe Burn Injury

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Anesthetic management during labor and delivery of a parturient after severe burn injury presents many unique challenges. We report the case of a 25-year-old parturient with a history of 85-90% total body surface area burn in 2002, who presented for a pre-delivery anesthesia evaluation. We outline the management plan that was devised and resulted in adequate labor analgesia. There are a few cases in the literature reporting the use of an epidural catheter for labor analgesia and possible Cesarean section in post-burn patients. We suggest that it is important to perform a thorough assessment of post-burn parturients prior to the onset of labor. This assessment is useful in revealing potential limitations and complications that could arise during labor and delivery; thus allowing preparations to be made for interventions that may become necessary.

Keywords: epidural analgesia, burns, pregnancy

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Introduction

Pregnant patients with a history of burns present a challenge to providing obstetrical anesthesia. While there are many case reports presenting the management of patients suffering from burns during pregnancy, there are few reports of obstetrical anesthesia in the post-burn patient. The incidence of burn injury in the United States is greater than 450,000 per year [1]. Pregnant patients account for 6.8-7.8% of admissions for thermal injury and have an increased mortality rate of 63% when the total body surface area burn is 25-50% [2].

The trauma of a burn injury can result in significant scarring, inhalation injury, contractures, amputations and many other long-term complications. These anatomical changes in association with an incidence of failed intubation that is eight times higher in the obstetrical patient compared to the general population further complicates airway access in these patients [3]. Therefore, it is critical to develop an anesthetic plan that minimizes risks, allows for adequate intravenous (IV) access and reduces the need for intubation in these patients.

Case report

A 25-year-old nulliparous parturient at 32 weeks of gestation with a history of 85-90% total body surface area burn secondary to a house fire 14 years prior presented for pre-delivery anesthesia evaluation. Her burns were mostly third degree with some areas of fourth degree resulting in scarring and contractures on her face, neck, thorax, upper part of abdomen and back, arms and upper thighs to foot. Her scalp was spared and she had partial sparing of her face, lower back, upper thigh, legs and umbilicus to groin region (Figure 1). Her burn injuries also resulted in bilateral arm amputations.

On physical exam, her pulse was 90 beats per minute, respiratory rate of 18 breaths per minute and blood pressure of 129/70 mmHg. Her breath sounds were clear on auscultation bilaterally. Her cardiac exam revealed normal heart sounds with no murmurs. The airway exam was significant for a restricted mouth opening of 3 cm, thyromental distance of 5 cm, limited neck extension, and Mallampati IV. All spinous processes were palpable under scar tissue on back examination.



Figure 1.
Epidural catheter placement in a 25-year-old parturient with a history of 85-90% total body surface area burns.

The patient presented at 40 weeks gestation for induction of labor secondary to intra-uterine growth retardation with minimal flow on umbilical Doppler. Due to bilateral arm amputation and difficult IV access, a central line was placed through the right femoral vein after multiple attempts at placing an internal jugular central line were unsuccessful. Once IV access was secured, the patient received an epidural catheter that could be used for labor analgesia and surgical anesthesia in case an emergent Cesarean section became necessary.

A 19 gauge epidural catheter was placed using a 17 gauge Tuohy needle in the L4-L5 interspace. The catheter was left inserted at 5 cm greater than the length of the Tuohy needle insertion. A test dose of Lidocaine 1.5% with epinephrine 1-to-200,000 was negative for signs of intrathecal placement. The patient was then given a 4 mL followed by 5 mL bolus of 0.0625% bupivacaine and 3 mcg/mL fentanyl. Her labor epidural analgesia was maintained using the same solution at a rate of 12 mL/hr.

The fetus was delivered using vacuum assisted delivery due to a non-reassuring fetal heart rate. The delivery was complicated by a third degree laceration that was repaired using anesthesia provided through the labor epidural catheter. Post-partum, the epidural catheter was removed and the patient was satisfied with her pain control during labor, delivery and laceration repair.

Discussion

The anesthesia delivery plan in this patient population should address preparation for acquiring IV access, anesthesia during emergent or elective Cesarean section and maintaining the airway. The plan for this patient included IV access through the feet with a secondary option of central venous access through the femoral vein due to bilateral arm amputations. In anticipation of a difficult intubation, an epidural catheter placed early in the labor period was preferable for use in the event of an emergent Cesarean section rather than exposing the patient to the risks of intubation under general anesthesia. In the event of an emergent Cesarean section, 2% lidocaine or 3% chloroprocaine could have been injected into the epidural space through the epidural catheter to provide rapid adequate surgical anesthesia. In order to reduce the need for intubation, the plan for an elective Cesarean section included either spinal anesthesia or combined spinal and epidural anesthesia.

Regional anesthesia is the method of choice for labor pain control in patients with a difficult airway. However, should hemodynamic instability arise, one must be prepared to intubate the patient if necessary in order to protect the mother and fetus from damaging effects of poor oxygenation [4]. The plan for intubation in this patient included having difficult airway cart and video laryngoscopy easily accessible.

Conclusion

Post-burn pregnant patients present a unique challenge to providing obstetrical anesthesia. These challenges may include difficult IV access, poor neck extension, altered oral anatomy, positioning problem from contractures. These challenges can effect safe accomplishment of both regional and general anesthesia. It is important to individualize anesthesia plans to each patient and be prepared for all possible complications that could arise.

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Anesthetic Management of Cleft Palate Associated with Meier-Gorlin Syndrome

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Meier-Gorlin syndrome (MGS) is a very rare autosomal recessive primordial dwarfism disorder, characterized by microtia, patellar aplasia/hypoplasia, and a proportionate short stature. Typical facial characteristics during childhood comprise a small mouth with full lips and micro-retrognathia. Presence of cleft palate in these patients is usual condition. Due to associated congenital pulmonary emphysema and sudden cardiac death during anesthesia these patients present major perioperative challenges to anesthesiologist. We report successful anesthetic care in a 4-year-old male child diagnosed with Meier-Gorlin syndrome and admitted for repair of cleft palate. Because of dysmorphic features, we faced difficulties during intubation. Being a multisystem disorder, each patient of Meier-Gorlin syndrome requires meticulous pre-operative evaluation and high level of intraoperative and postoperative continuous monitoring regardless of any surgical procedure. Presented case report highlights the significance of aggressive perioperative management in MGS which can result in successful outcome. As for additional features, it is worth to note that in our patient we didn't reveal short stature and patellar anomalies.

Keywords: Meier-Gorlin syndrome, cleft palate, intubation

Introduction

The Meier-Gorlin syndrome (MGS) is a very rare autosomal recessive disorder characterized by severe intrauterine and postnatal growth retardation, microcephaly, bilateral microtia, and aplasia or hypoplasia of the patella [1]. Many cases have primordial dwarfism with substantial prenatal and postnatal growth retardation [2].

Mutations in five genes from the pre-replication complex (ORC1, ORC4, ORC6, CDT1, and CDC6) were identified in individuals with MGS [3]. MGS is relatively rare. It was defined by Gorlin in 1975, although an earlier case report from 1959 was noted. Since then, additional cases have been reported worldwide [4].

Associated clinical features encompass feeding problems, congenital pulmonary emphysema, mammary hypoplasia in females and urogenital anomalies, such as cryptorchidism and hypoplastic labia minora and majora. Typical facial characteristics

during childhood comprise a small mouth with full lips and micro-retrognathia.

Most individuals with MGS have normal intelligence. The acquisition of skills requiring mental and motor coordination (psychomotor development) is normal or borderline normal. Some affected children show delays in attaining developmental milestones.

The diagnosis MGS should be considered in patients with at least two of the three features of the clinical triad of microtia, patellar anomalies, and pre- and postnatal growth retardation. In patients with short stature and/or microtia, the patellae should be assessed with care by ultrasonography before age 6 or radiography thereafter.

Because of multiple system involvement and congenital anomalies the perioperative anesthetic management of these patients is very challenging. We are presenting a report about the perioperative management of case of MGS admitted for repair of cleft palate, which is a usual manifestation of this

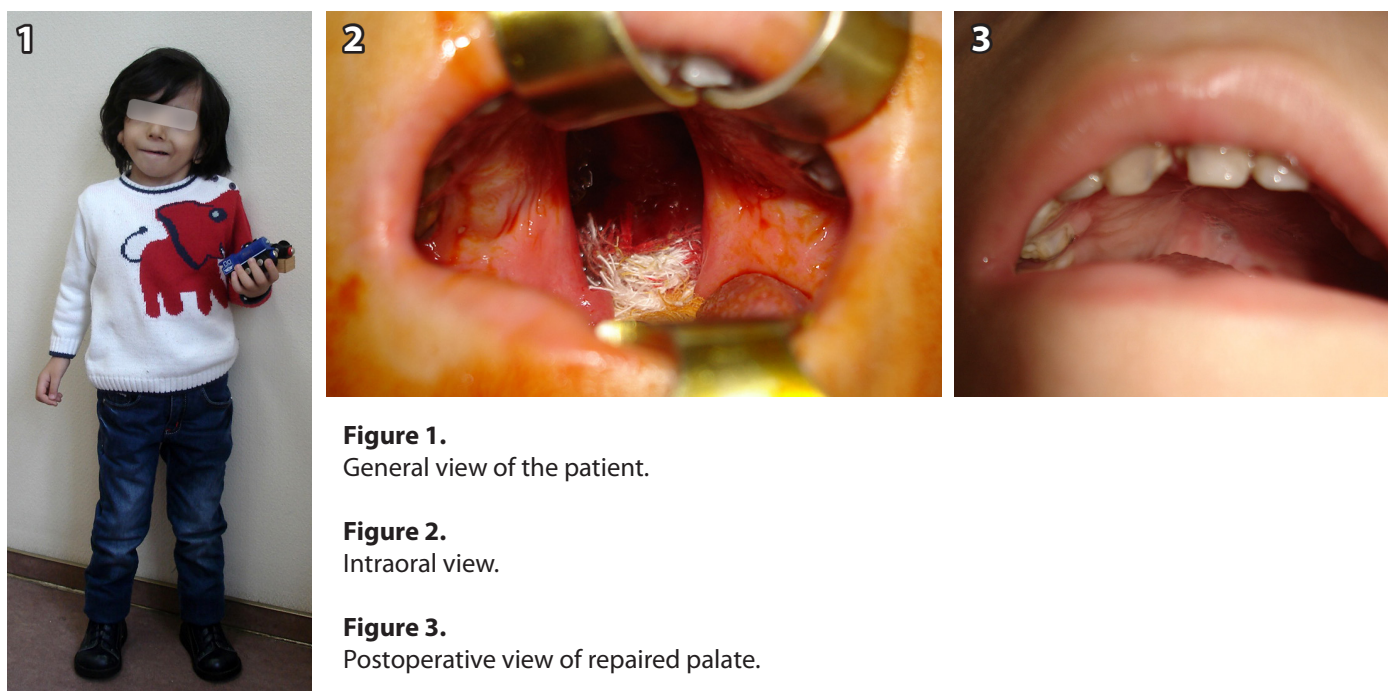


Figure 1.
General view of the patient.

Figure 2.
Intraoral view.

Figure 3.
Postoperative view of repaired palate.

syndrome. As per for our knowledge, after extensive search in medical literature, no such case has been reported in Azerbaijan population and worldwide regarding anesthetic management during cleft palate repair in MGS.

Case report

A 4-year-old boy weighing 10 kg with MGS was referred to our hospital for cleft palate repair. He was diagnosed with MGS by pediatric neurologist at the age of 3. The genetic analysis had shown anomalies in ORC6 gene located in 16th chromosome. The main complaints of his parents were the inability of child to eat solid food and unclear voice. Physical examination revealed characteristic dysmorphic facial features, small mouth, incomplete cleft palate, underdeveloped lower jaw, full lips and a narrow nose with a high nasal bridge (Figure 1, 2). Surprisingly our patient didn't have any patellar anomalies and his height was in normal range. There was no history of seizures, thyroid dysfunction and any surgical procedure in the past. His vital signs were found to be within normal limits for his age. Heart rate was 120/minute and blood pressure 90/40 mmHg, respiratory rate 24/minute, and SpO₂ 99% on pulse oxymetry. His biochemical parameters, including specifically investigated serum calcium and thyroid function tests were within normal limits. Chest radiograph, electrocardiogram and echocardiography results were normal as well. His Mallampati score was 4, the thyromental distance was grade 3 and his inter incisor distance was one finger breadth only. Potential risk during anesthesia and surgery was explained to parents in detail and written high risk consent was obtained.

The child was kept nil by mouth for six hours and the morning dose of 10 mg ranitidine tablet was given with sip of water. An intravenous access was taken with 22 G angiocath after applying local anesthetic cream (Emla) and the patient was

sedated with oral dose of midazolam 0.5 mg/kg. Half an hour before induction, bolus of antibiotic was administered slowly intravenously. Pre-oxygenation and continuous monitoring with electrocardiography, noninvasive blood pressure, SpO₂, peripheral O₂ saturation and end tidal CO₂ started. After 5 minutes of preoxygenation patient was induced with propofol 2 mg/kg, fentanyl 2 µg/kg and atracurium 0.5 mg/Kg. During laryngoscopy the visualization of vocal cords was difficult due to characteristic facial dysmorphic features; his Cormack and Lehane grade was strong 4. After three unsuccessful attempts with McCoy laryngoscope and with the fiberoptic bronchoscope, an emergency tracheostomy was performed and intubation was done with 3.5 inch cuffed tube. The ventilation delivered in intermittent positive pressure ventilation (IPPV) mode with appropriate parameters.

Cleft palate defect was closed by correcting position of muscles of soft palate and reconstruction of muscle sling. Anesthesia maintained on oxygen, sevoflurane and intermittent doses of atracurium. During intraoperative phase there was one episode of tachycardia which was settled with additional dose of fentanyl (5 microgram) and deepening plane of anesthesia with sevofluran. Vital and hemodynamic parameters were stable and continuously monitored during intraoperative period and patient did not show signs of awareness. Surgery lasted for two hours and after confirming haemostasis, throat packs were removed. After gaining adequate power, patient was extubated. Tracheostomy tube was left, oxygenation continued and patient observed for 15 minutes in operation theatre. With continuous monitoring patient was shifted to surgery unit where he was observed for 24 hours and pain was managed with intravenous paracetamol 30 mg/kg. On second post-op day his tracheostomy tube was removed and on third post-op day he was discharged without any adverse event (Figure 3).

Discussion

Ear-patella-short stature or Meier-Gorlin syndrome is an extremely rare condition, with less than 50 cases reported in the literature. It is an association of malformations which typically include bilateral microtia, absent patellae, short stature, poor weight gain, and characteristic facial features such as high forehead, micrognathia with full lips and small mouth, and accentuated nasolabial folds. In our case, whose diagnosis was proved by genetic analysis, there were no patellar anomalies as well as short stature.

Although cases of Meier-Gorlin syndrome reported since 1959, we could not find any report concerning details of general anesthesia management in these patients. In our case, we confront with some difficulties during perioperative period. These included Mallampati score 4, grade 3 thyromental distance and interincisor distance one finger only. During direct laryngoscopy, his Cormack and Lehane grade was determined to be strong 4. These findings can be partially explained as general tendency for malformations including those in orofacial area, as for instance underdeveloped mandible, temporomandibular joints, tilted larynx and overhanging base of the tongue. Taking all mentioned above into an account the anesthesiology and the surgery teams should be ready for difficult intubation. The prolonged nature of surgery and prone position required mean that the patient would require good relaxation, adequate analgesia and also sufficient oxygenation to tide over the preoperative phase. Therefore, facial or laryngeal mask hardly can be a choice for such cases. If intubation fails after three attempts, then alternative ways of ventilation i.e. jet-ventilation, cricothyrotomy or tracheostomy must be strongly suggested. It is worth to note that operations performed in oral cavity impose particular challenge

on respiratory ways, so from alternative ways of intubation, the tracheostomy seems to be the most appropriate.

According to our experience, the patients with Meier-Gorlin syndrome should be investigated before surgery for anomalies in airway, so that both anesthetist and surgeon could have a plan and be ready for emergency situations. Surgical correction of cleft palate in such patients demands very high anesthetic and surgical skills as both share common airway. Being a multisystem disorder, each patient of MGS requires meticulous preoperative evaluation and high level of intraoperative and postoperative continuous monitoring regardless of any surgical procedure. Presented case report highlights the significance of aggressive perioperative management which can result in successful outcome in patients with MGS.

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An Unusual Case of Isolated Femoral Vein Injury After Bull Gore

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Animal related injuries are frequently reported in countries where the bulls are used for traditional show events like bullfighting and bull-running as well as in countries where the farming and livestock rearing is predominantly practiced. Although, they are rare among other penetrating traumas, they often tend to be mortal. They have a unique pattern of injury mechanism. Bull gore injuries frequently target the perineal, abdominal and inguinal regions. An isolated femoral vein injury which is caused by an inguinal bull gore with a massive hemorrhage is unusual and it has not been reported in the available literature. In this paper, successfully treated a male patient from the villages of Kars district, who presented with an isolated femoral vein injury after bull gore was presented.

Keywords: Bull gore, femoral vein, injury.

Introduction

Bullhorn injuries have rarely been documented in the literature. Most of the articles are related to the injuries occurred during bullfighting shows and bull-running festivals [1]. Bullfighting is still a popular and uniquely cultural tradition of many Ibero-American countries (Spain, Portugal, Mexico etc.) [2]. Injuries of bull attack frequently occur in these countries because this animal is used in the celebrations and shows [3]. However, animal related injuries are more frequently reported in countries where the bulls are used for farming and stockbreeding [4]. Despite their rate is low among all injuries, bull gorings tend to be fatal. Major vascular injuries to the limbs caused by this type of penetrating traumas often involve the arteries [2,5]. However, these vascular traumas, being either arterial or venous, need a prompt and precise intervention [6]. Injuries and even deaths caused by bulls can also be seen in Kars province, the easternmost part of Turkey, where farming and livestock rearing are widespread practiced. An isolated injury to the femoral vein caused by an inguinal bull gore has not been reported so far in the available literature. In this article, an unusual case of an

isolated femoral vein injury due to bull gore without any arterial or neurologic involvement and its successful surgical treatment are presented.

Case report

A 34-year-old male referred to the emergency department after gored with the horns of a bull in his left femoral region. There was a massive bleeding from the femoral triangle with a hematoma inside the horn entry site. Palpation of the peripheral pulses revealed no pulse deficit. Color Doppler ultrasound showed triphasic patterns in all distal arterial vasculatures. He was semi-conscious due to massive blood loss with a blood pressure of 60/35 mmHg and a heart rate of 123 bpm. Computerized Tomography (CT) Angiography examination was performed to determine the origin of the bleeding and vascular injury. CT Angiography scans revealed no arterial injury, but an opaque extravasation over the left femoral vein was inspected (Figure 1). That extravasation and femoral sheath opacification demonstrated the left femoral vein injury.

The patient was taken to the operating room. Under general anesthesia, the left

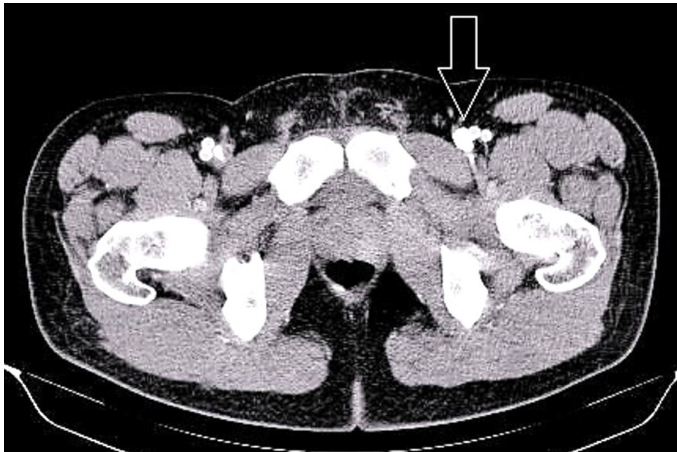


Figure 1. Computerized Tomography Angiography (CTA) scan. Arrow is showing the opaque extravasation out of the left common femoral vein laceration.

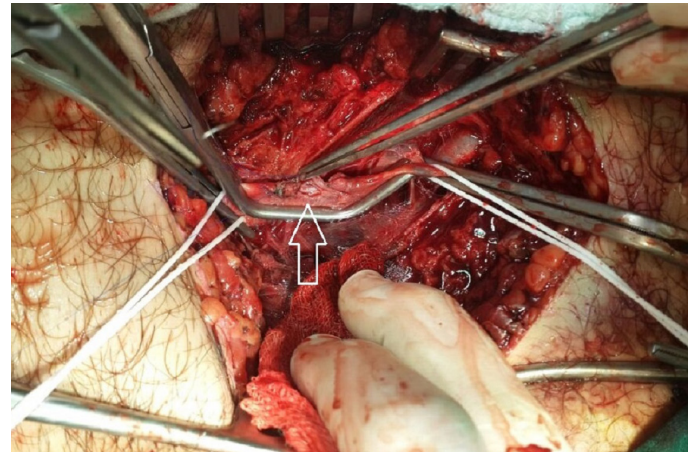


Figure 2. Arrow is showing laceration on the side-clamped common femoral vein.

femoral region was explored through a longitudinal skin incision. The femoral sheath was reached under the fulminant bleeding. The common femoral vein laceration was identified. Proximal and distal clamps were entrenched, and a side-clamp was positioned to secure further the vein from bleeding (Figure 2). Unfractionated heparin was given intravenously. The vein was repaired primarily with lateral venorrhaphy technique (Figure 3). The venous tissue loss was not extensive, and the primary suturing gave a good result. Polypropylene 6-0 with a 13 mm needle was used as the suture material. The vein was then unclamped, and an intact venous refilling was observed. Erythrocyte suspensions were transfused intraoperatively to increase the hemoglobin levels. Gentamycin (160 mg/day), Cefazolin (1500 mg/day), Acetylsalicylic acid (150 mg/day) were administered during the postoperative follow-up. The patient was discharged sixth postoperative day with no further complication.

Discussion

Despite the urbanization, injuries and deaths as the result of animal attacks are still encountered all over the world [7]. Although their rate is low compared to other usual penetrating injuries, they tend to be severe [8]. People whose occupation is animal husbandry may be the target of such an attack and may be severely injured or killed while tending to large animals [3]. Apart from the farmers, other people who work with the animals including veterinarians, butchers, workers in zoos and circuses are all at high risk of bull gore [9]. According to the studies, most of the victims of the bull attack are either the owner of the animals or workers who are responsible for their care [3]. Bull gore injuries are common in Latin countries because these animals are frequently used in certain shows and fests [10]. Therefore, a specialized and unique medical care for the bullfighters named *Cirurgica Taurina* has been established in the big arenas in Spain and South America during past two decades [11].

The bull is normally a calm animal and may even be domesticated, but an aggressive behavior may be exhibited with no

apparent reason [12]. Bullfighting and bull-running provoke aggressive behavior. Bullhorn injuries and its unique mechanisms have been documented in details. Understanding this mechanism of injury due to the interaction of multiple distinct forces allows handling different complex wound patterns [1]. As the matador or victim stand in front of the attacking animal, the horn of the bull follows a semicircular path sideways and upwards [13]. The depth of the wound is dependent on the penetration force of the bull's horn into the body and the animal's body weight and strength [10]. The surgeon should be suspicious of underlying injuries that cannot be seen initially because of high kinetic energy transformed into the potential energy [1,13]. In addition, the victim's body weight exerts an equal oppositional force as his body is lifted and suspended by the bull's horns. As the animal attempts to disengage the person's body, a rotational movement occurs because of an unstable balance depending on the center of gravity. This rotational movement during goring is called "rag-doll" and "spinning top" appearance [1].

In bull gore during bullfighting, lower leg and the thigh injuries account 50% of all wounds [13]. Major vessels can be lacerated because of the rotational movement of the bull's head leading to a retraction in the media and intimal layers of the vasculature. This may further trigger the Virchow's triad that slows the bleeding [14]. The second common site of goring is the perineum. Scrotal avulsion and anal destruction often need surgical reconstruction [15]. Abdominal injuries constitute the third common injury site and have been documented most commonly on the right side. The predominance of the right side involvement may be because of the instant reflex of the victim to turn the right side to protect himself with his right arm [1]. Fortunately, the intestinal damage is seen only 10% of the abdominal injury cases [13]. However, as the pattern of injury varies in different countries, the injury site predominance also changes. For example, the perineal injuries are predominate in India while the lower extremity injuries are more common in Latin countries [3,14,16]. This contradiction is demonstrated in



Figure 3.
Surgical reconstruction of the common femoral vein with venorrhaphy.

Table 1. Patterns of bull gore injuries in different countries.

Country	Most common injury site	Other common injury sites
India [14]	Perineum (36.6%)	Abdomen (24.8%), Head and Neck (15.8%), Thorax (13.9%), Extremities (9.8%)
Turkey [3]	Abdomen (60.9%)	Thorax (39.1%)
Latin Countries [1,2]	Lower extremity (>50%)	Perineum (10.5%)

Table 1.

In the management of bull gore, precise and extensive exploration of all wounds for damage assessment under local or general anesthesia is essential [1]. Trauma to the anus, rectum, and abdomen increase the morbidity due to fecal contamination [14]. Bull gores directed to the femoral triangle may cause injury to the femoral sheath that contains femoral artery, femoral vein, and femoral nerve and are potentially lethal [2]. In the case of the femoral vein injury, several surgical techniques were described according to the injury mechanism and injury site. If there is no gross tissue loss the vein can be primarily repaired. The lateral venorrhaphy is the most preferred type of primary reconstruction unless it does not result in sandglass shape of the vein. Alternative reconstruction techniques include the patch-plasty, division and reanastomosis, anastomosis of the femoral vein to the deep femoral vein [6].

In conclusion, bull gore injuries exhibit bizarre and complex wounds that require a prompt identification and exploration. Understanding the mechanism and the nature of bull gores enables the surgeon to handle adequately such atypical injuries for better outcomes. In addition to that, caution is needed for the people having close contact and working with bulls and other animals that may cause injury. The risk may be reduced by using restraints and barriers with appropriate housing and confining structures. Dehorning may also be applied as a precaution to prevent bull gore injuries.

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Multiple Submandibular Duct (Wharton's Duct) Stones

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Obstruction is a common problem of major salivary glands, and the most common cause is salivary calculi. The most frequent locations of sialolithiasis are submandibular gland and its duct; the vast majority of them are found in Wharton's duct. Wharton's duct stones are frequently single, and multiplicity is uncommon. Only about 5% of cases have more than two calculi. Based on the location and size of stone(s), there are different options for the treatment of sialolithiasis. Therefore, radiologic imaging has an important role in the diagnosis and management of sialolithiasis. In this study, we presented an uncommon case of sialolithiasis with six stones within submandibular duct that CT scan detected them accurately.

Keywords: sialolithiasis, submaxillary gland, diagnostic imaging.

Introduction

Obstruction is a common problem of major salivary glands, and the most common cause is salivary calculi [1, 2]. The most frequent locations of sialolithiasis are submandibular gland and its duct; the vast majority of them are found in Wharton's duct [3]. Wharton's duct stones are frequently single [4], and multiplicity is uncommon. Only about 5% of cases have more than two calculi [4]. Based on the location and size of stone(s), there are different options for the treatment of sialolithiasis [3]. Therefore, radiologic imaging has an important role in the diagnosis and management of sialolithiasis. In this study, we presented an uncommon case of sialolithiasis with six stones within submandibular duct that CT scan detected them accurately.

Case report

A 40-year-old man who developed pain and swelling in right submandibular region, for about 15 days, was referred to radiology department. Clinically, abscess formation was one of the differential diagnosis for this complaint. CT scan showed six stones in right Wharton's duct (Figure1) with the

largest one being about 9 mm in size. Moreover, the enlargement of right submandibular gland was demonstrated with more enhancement in comparison with left side in favor of inflammation and with evidence of some sialectasis (Figure2). There wasn't any abscess formation.

Discussion

More frequent submandibular gland stone is attributed to several factors. In addition to distinctive composition of submandibular saliva, other predisposing factors are angulation of Warton's duct against the gravity associated with its wider and longer course compared to parotid duct [5, 6]. However, multiple calculi in Warton's duct is uncommon, and only about 5% of cases with Warton's duct stone have more than two calculi [4]. Huang TC et al. reported a patient with four large calculi within submandibular gland duct [7] and Shafi M et al. described thirteen small stones of 1-3 mm within submandibular gland duct [8].

Another area for consideration is the subject of salivary stone diagnosis. Ultrasonography has limitation in detection of sialoliths smaller than 3 mm [3] and those

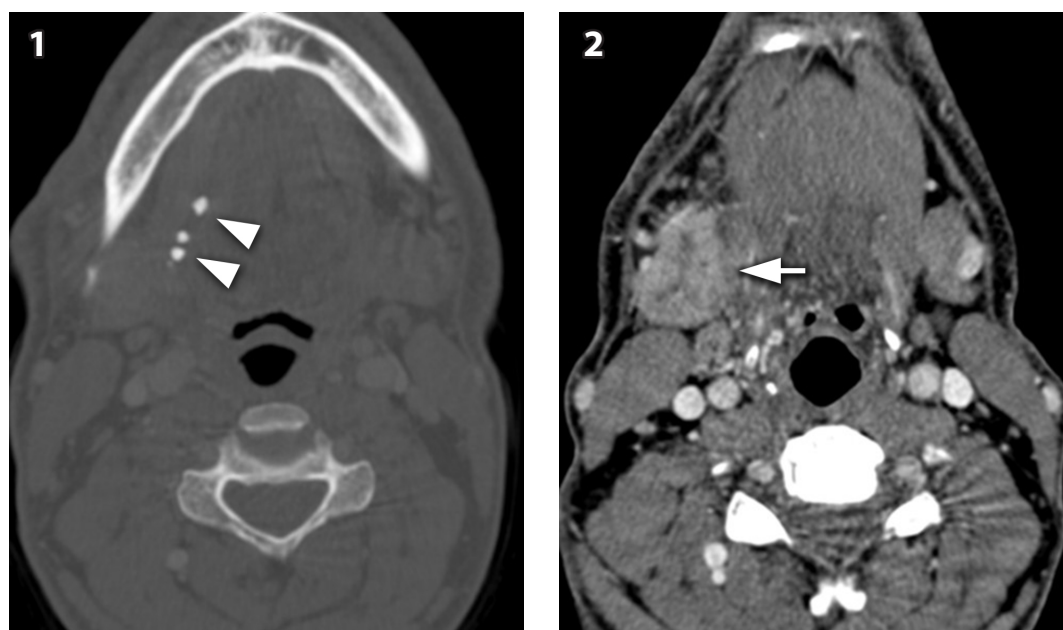


Figure 1.
Axial CT image (bone window): Multiple stones (arrowheads) in right Warton's duct.

Figure 2.
Axial CT image: Enlarged right submandibular gland (arrow) with sialectasis

located within the distal duct [1]. CT scan without contrast is excellent imaging method in detection of salivary stones [9, 10]. According to Burke CJ et al, CT scan with contrast is preferred modality in the patients with suspicious for abscess formation [1].

Conclusion

Although multiple calculi in Warton's ducts is uncommon, this diagnosis should be considered in patients with submandibular pain and swelling. Moreover, selection of proper imaging modality is necessary to make a correct diagnosis and to define the number, size, and location of salivary stones.

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Analysis of the Association between Hand Preference, Gender, Eye Dominance, 2D:4D Ratio and Handgrip Strength in Young Healthy Individuals

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Objective: The purpose of this study is to examine the association between hand preference in young healthy individuals and handgrip strength (HGS), (which is accepted to be an objective measurement in the assessment of gender), 2D:4D ratio (ratio of the length of index finger to that of ring finger), eye dominance and upper limb performance.

Methods: A total of 198 individuals, 111 males and 87 females, participated in our study. Oldfield Inventory was used to find out hand preference. Baseline hand dynamometer was used to find out HGS. The test developed by Rosenbach was used for determination of the dominant eye. For assessment of 2D:4D ratio, measurement was made starting from the basal fold of the finger to the fingertip.

Results: According to the results of the statistical analysis, no significant difference was found between hand preference and 2D:4D ($p>0.05$). Statistically significant difference was found between eye dominance and hand preference ($p<0.05$). Statistically significant difference was found between right and left hand preference and right and left HGS of males ($p<0.05$). Statistically significant difference was found between right hand preference and right and left HGS of females ($p<0.05$), where significant difference was not found between left hand preference and right and left HGS of females ($p>0.05$).

Conclusions: The association of hand preference with other parameters is important to determine cerebral lateralization. We believe that the result which shows hand preference was directly proportional to eye dominance and HGS means that these parameters can be a guide in determining the dominant hemisphere.

Keywords: hand preference, dominant eye, 2D:4D ratio, handgrip strength

Introduction

The right and left symmetry of the body is realized through brain hemispheres which look the same. Sensual and motor centers, which are symmetrically located in brain hemispheres, make diagonal connections with the right and left side of the body [1]. Thus, the centers on the left hemisphere of the brain control the right side of the body, while the centers on the right hemisphere control the left side of the body. Hand preference is a guide in finding out which brain hemisphere is dominant. Studies have shown that hand preference is the most practical method in determining the domi-

nant hemisphere [2]. Hand preference is one of the most studied subjects by clinical and preclinical sciences as an indicator of motor dominance [3, 4]. The left hemisphere of our brain controls our right hand while the right hemisphere controls our left hand. In line with this information, it is possible to say that the left hemisphere is dominant in right-handed people while right hemisphere is dominant in left-handed people. Thus, it can easily be said that the superiority of the left hand to the right hand in left-handed is connected with the right hemisphere while the superiority of the right hand to the left hand in right-handed is connected with the

left hemisphere [5]. Studies have proposed some theories related with hand preference. According to Geschwind and Behan, testosterone suppresses the left hemisphere and this causes left-hand preference [5]. In their study, Dane and Balci found that the hand preferred in writing was associated with the lengths of the second and fourth fingers (2D:4D ratio — the ratio of the length of index finger to that of ring finger) of the hand [6]. In addition, a great number of studies which examined hand preference and dominant eye have been conducted to find out the functional asymmetry of the brain. However, the association between hand preference and dominant eye have not been fully explained [7-9]. The purpose of this study is to examine the association between hand preference in young healthy individuals with HGS [10, 11], (which is accepted to be an objective measurement in the assessment of gender), 2D:4D ratio, eye dominance and upper limb performance.

Material and Methods

This research was undertaken under the approval no. 2016/47 of Malatya Clinical Research Ethics Committee. A total of 198 voluntary students studying at İnönü University, 111 males (average age: 21.42 ± 1.67 years) and 87 females (average age: 21.38 ± 1.50 years), who did not have an exercising (were not involved in any exercise programs) were included in the study. The inclusion criteria were: (a) presence of a physically healthy appearance and absence of participation in a resistance exercise at least six months before the study, (b) freedom from drug use or absence of any medical restraints to participate in the study, (c) absence of usage of dietary supplement to increase performance (as for example, creatine), (d) absence of any illnesses and previous orthopedic operations. All the subjects were informed about the study, volunteering consent forms were read and signed. Experimental protocols were conducted in line with Helsinki declaration. Turkish translation of Oldfield Hand preference Inventory modified by Geschwind and Behan was used to find out hand preference [12, 13]. The questions were about functions within daily activities and the hands used while conducting these functions were found. The results were divided in five groups as “always right hand”, “generally right hand”, “both hands”, “generally left hand”, “always left hand”. The scores were as “always right hand” +10 points, “generally right hand” +5 points, “both hands” 0 (zero) points, “generally left hand” -5 points, “always left hand” -10 points. The results of scoring were interpreted: between 100 and 80 points as “strong right-handed”, between 20 and 75 as “weak right-handed”, between 15 and -15 as “Ambidextrous”, between -20 and -75 as “weak left-handed” and between -80 and -100 as “strong left-handed”. Negative scores are in favor of left hand preference while positive scores are in favor of right hand preference. Male and female students who had +80 points were accepted as right handed. HGS was measured at standard test position recommended by American Society of Hand Therapists (ASHT) [14]. It was measured while the subject was in upright sitting position on a chair placed on a smooth surface. Hips and knees had 90° flexion, feet touched the ground, elbow touched the body at 90° flexion, forearm had neutral position and the wrist was placed at 0-30° extension

and 0-5° ulnar deviation. During the measurements, the subject whose HGS was measured was asked to grip the holds of the test device as strong as possible [15]. The test developed by Rosenbach was administered for determination of the dominant eye [16]. For 2D:4D ratio, before the measurement, care was taken for the participants' hands not to have any factors that could influence the measurement such as trauma, edema, swelling and inflammation. The measurements were made by using Astor digital caliper. The lengths of the second and fourth fingers of the participants were measured starting from the basal folds of the fingers to the fingertip and separate (2D:4D) ratios were calculated for both hands.

Statistical Analysis

Normality of the data was analyzed with Shapiro-Wilk test. Mann Whitney U test was applied because the data did not show normality. IBM SPSS Statistics 22.0 software was used for the analysis. The data represented as arithmetic mean (X) +/- standard deviation (SD) and the significance level was set at 0.05.

Results

Some of the demographic data of the 111 males and 87 females in the study such as age, height and weight are presented below (Table 1).

It was found that 81.08% of the males in the study were right handed, while 18.92% were left handed. 87.35% of the females in the study were right handed, while 21.65% were left handed. Mann-Whitney U analysis was conducted on the data in order to find out whether there was statistically significant difference between gender and hand preference. According to the analysis result, no significant difference was found between gender and hand preference ($p > 0.05$), (Table 2).

It was found that the right hand 2D:4D ratio of the right handed males in the study was 0.97 ± 0.35 mm, while their left hand 2D:4D ratio was 0.98 ± 0.09 . The right hand 2D:4D ratio of the right handed females in the study was 1.03 ± 0.11 , while their left hand 2D:4D ratio was 0.98 ± 0.12 . Mann-Whitney U analysis was conducted on the data in order to find out whether there was statistically significant difference between hand preference

Table 1. The values as $X \pm SD$, Min and Max of some parameters of men and women participating in study

Parameters	Male			Female		
	X $\pm SD$	Min	Max	X $\pm SD$	Min	Max
Age (year)	21.42 ± 1.67	18	26	21.38 ± 1.50	18	25
Height (cm)	178.43 ± 5.70	160	192	164 ± 5.37	152	178
Body weight (kg)	72.01 ± 10.30	50	110	55.82 ± 8.43	43	85

SD - Standard deviation.

Table 2. The numerical values of gender and hand preference. Mann-Whitney U analysis results.

Gender	Hand preference				p
	Right		Left		
	N	%	N	%	
Male	90	81.08	21	18.92	0.235
Female	76	87.35	11	12.65	
Total	166	83.83	32	16.17	

Table 3. The numerical values of hand preference and 2D:4D ratio. Mann-Whitney U analysis results.

Hand preference	2D:4D ratio				p
	Male		Female		
	N	SD	N	SD	
Right	0.97	±0.35	1.03	±0.11	0.532
Left	0.98	±0.09	0.98	±0.12	0.376

SD - Standard deviation.

Table 4. The numerical values of eye dominance and hand preference. Mann-Whitney U analysis results.

Hand preference	Dominant eye				p
	Right		Left		
	N	%	N	%	
Right	137	82.53	29	17.47	0.000
Left	9	28.12	23	71.88	
Total	146	76.04	52	23.96	

and 2D:4D ratio. According to the analysis result, no statistically significant difference was found between hand preference and 2D:4D ratio ($p>0.05$), (Table 3).

166 of the participants were found to use their right hands, while 32 were found to use their left hands. Of the 166 participants who used their right hands, right eyes of 137 were dominant while left eyes of 29 were dominant. Of the 32 participants who used their left hands, right eyes of 9 were dominant while left eyes of 23 were dominant. According to Mann-Whitney U analysis, statistically significant association was found between dominant eye and hand preference ($p<0.05$), (Table 4).

In right handed males in the study, right HGS was found to be 50.51 ± 7.32 kg, while left HGS was found to be 46.33 ± 7.49 kg. In left handed males in the study, right HGS was found to be 44.28 ± 4.5 kg, while left HGS was found to be 50 ± 7.01 kg. According to Mann-Whitney U analysis, statistically significant association was found between right hand preference and left hand preference and right and left HGS in males ($p<0.05$). In right handed females in the study, right HGS was found to be 29.06 ± 6.26 kg, while left HGS was found to be 26.60 ± 5.58 kg. In left handed males in the study, right HGS was found to be 21.27 ± 5.96 kg, while left HGS was found to be 23.63 ± 5.69 kg. According to Mann-Whitney U analysis, statistically significant association was found between right hand preference and right and left HGS in females ($p<0.05$), while no statistically significant association was found between left hand preference and right and left HGS ($p>0.05$), (Table 5).

Discussion

Hand preference gives information about the functional asymmetry of the brain. Bryden [2] stated that hand preference is the easiest method in determining the dominant hemisphere of the brain. Experts making researches in this area have recommended hand preference to be determined through questionnaires like in our study. There are questionnaires prepared by Annett [17] and Oldfield [13] for this purpose. In a study prepared by Bryden [2] to find out hand preference with questionnaire method, whether the practical application reflected the preference was researched and the two methods were found to be very consistent. In their study, Gündoğan [12], Gökbel [18] and Çalışkan [19] examined hand preference in five groups similar to our study. In their study about hand preference, Gündoğan et al. [12] found right hand preference high in both female and male students with rates of 92.2% and 93.4%, respectively. In our study, these rates were found to be 81.08% and 87.35%, respectively. Our results are in

Table 5. Right and left handgrip strength values in kg and hand preference. Mann-Whitney U analysis results.

Gender	Right hand preference		p	Left hand preference		p
	Handgrip strength			Handgrip strength		
	Right	Left		Right	Left	
Male	50.51 ±7.32	46.33 ±7.49	0.000	44.28 ±4.5	50 ±7.01	0.021
Female	29.06 ±6.26	26.60 ±5.58	0.001	21.27 ±5.96	23.63 ±5.69	0.178

parallel with the results of Gündoğan et al. [12]'s study. Özdemir and Soysal [20] reported that left hand preference incidence varied between 8-10% in general population. Hoosain [21] reported left hand preference incidence as 10.9% in his study. Gökbel et al. [18] found left hand preference incidence as 12.6% while Tan [22] found this incidence as 10.3%. In our study, left hand preference incidence was 16.17%. Right hand preference incidence was found as 87.7% by Tan [22], as 93.9% by Gökbel et al. [18] and as 92.6% by Gündoğan et al. [12]. Right hand preference incidence was found as 83.83% in our study this rate was found to be similar to the rates in other studies. According to Geschwind [5], testosterone suppresses the left side of the brain and this causes left hand preference. However, left hand preference in the family, which is hereditary factors, influence this association. In our study, the rate of left hand preference in females was 12.65% while it was 18.92% in males. Similarly, Moffat and Hampson [23] stated that testosterone could have a role in the development of hand preference. Seizeur et al. [24] stated that right hand preference was more common in women since lateralization was different for men and women. In their study, Öztaşan and Kutlu [25] could not find a statistically significant association between hand preference and 2D:4D ratio. Our results supports this study. Annett [26] reported that right eye preference rate between right handed was higher than right eye dominance rate between left handed. Similarly, Dane and Gümüştekin reported that 83.33% of right handed and 50% of left handed preferred to use their right eyes [27]. Some researchers reported that there may be a weak association between hand preference and eye preference [28]. 82.53% of the right handed and 28.12% of the left handed in our study used their right eyes. In addition, according to the results of our study, 73.04% of the participants used their right eyes. The direct proportion between hand preference and dominant eye in literature matches our study. Peterson et al. found that the dominant hand had 10% more HGS when compared with the non-dominant hand [29]. The 10% rule shown by Peterson et al. is valid only for the people who use their right hand dominantly [29], while in people whose left is dominant, HGS is equal in both hands. Armstrong et al. found 0.1% - 0.3% difference in HGS between the dominant and nondominant hand [30]. Guedo Rojas et al. [31] stated that HGS was high for the dominant hand in both sexes. A directly proportional association was found between HGS and the dominant hand in our study. The association between HGS and the dominant hand in our study was found to be similar with the results in other studies.

Conclusion

In a conclusion, when men and women were discussed together, it was found that right hand preference is dominant for both genders; however, left hand preference was found to be more frequent in men in comparison to women. In addition, no significant association was found between hand preference and 2D:4D ratio. However, hand preference, eye dominance and HGS were found to be directly proportional in both men and women. The association between hand preference and other parameters are also important in terms of cerebral lateralization.

We believe that the direct proportion between hand preference, eye dominance and HGS will be a guide in finding out the dominant hemisphere. We hope that our study will be a resource for extensive studies on this subject.

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Effects of Universal Health Insurance on Health Care Utilization: Evidence from Georgia

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Introduction: Since 2013, Georgia enacted Universal Health Care Programme (UHP). Inclusion of uninsured population in the UHP will have a positive impact on their financial accessibility to the health services. The study aims to analyze the referral rate of the beneficiaries to the health service providers before introduction and after application of the UHP, particularly, how much it increased the recently uninsured population referral to primary health care units, and also to study the level of satisfaction with the UHP.

Methodology: Research was conducted by qualitative and quantitative methods. The target groups' (program beneficiaries, physicians, personnel of the Social Service Agency) opinions were identified by means of face-to-face interviews.

Results: Enactment of the UHPs significantly raised the population's referral to the family physicians, and the specialists. Insignificantly, but also increased the frequency of usage of laboratory and diagnostic services.

Conclusion: Despite the serious positive changes caused by UHP implementations the problems in the primary healthcare system still remain. Also, it is desirable to raise the availability of those medical services that may cause catastrophic costs. In this respect, such medical services must be involved in the UHP. For the purpose of effective usage of the limited funds allocated for health care services provision, the private health insurance companies should be involved in UHPs. This, together with the reduction of health care costs will increase a competition in the medical market, and enhance the quality of health service.

Keywords: Universal healthcare, Georgia.

Background

In 2006, the Ministry of Labour, Health and Social Affairs of Georgia has launched implementation of "Health Insurance Programme for Socially Vulnerable Families". Its aim was to ensure medical service for the population below the poverty line. In 2012, the Health insurance programme was extended to children aged 0-5, pensioner (senior citizens) women above 60 years and men above 65 years, students and people with severe disabilities.

In 2007, the Health Insurance programme covered only 4.1% of the population, in 2012, it increased up to 37.9%,

together with persons covered under private and corporate Health insurance (12.9%), overall amounting was up to 50.8% insured persons [1].

Despite the extension of the state health care programme coverage, more than a half of the population of the country, about 2 millions of persons had no insurance and in most cases, were unable to cover the medical expenses from own pocket [1]. It shall be mentioned that the number of visits to primary healthcare per person is 2.1 and with this indicator Georgia ends up second in comparison to European countries [2].

To settle the problem, Universal Health Care Programme (UHP) has been intro-

duced since February 28, 2013. 2 300 000 uninsured persons became the beneficiaries of the UHP. The programme aims at providing financial support for accessibility to healthcare to Georgian citizens who are not insured. First time in the history of the country the state programme extends to citizens of the country, as well as holders of neutral identification cards/neutral travel documents and individuals without citizenship status. The state money allocated for healthcare almost doubled from 2012 to 2013 and increased from 365 million to 634 million GEL [1].

UHP cover ambulatory consultations of a family physician, planned and urgent out-patient service, urgent in-patient treatment, planned surgical operation (including daycare inpatient) and related examinations in specified limit.

UHP provides the beneficiary with the opportunity of free choice of a medical institution. The programme beneficiary has a right to select a healthcare provider throughout Georgia and register with any family physician. Further, in case of dissatisfaction with the service provided, a person can change the provider once in two months. There is no any limit for selection of a provider when obtaining emergency in-patient or out-patient service. As for the planned in-patient service the beneficiary has to address the Agency of Social protection and obtain a voucher or a letter of guarantee. Any medical institution, which meets the requirements established by the law, is eligible to participate in UHP.

The aim of the study is to analyze the address of beneficiaries prior to and after Universal health i.e. the extent to which the visits of previously uninsured population to primary healthcare institutions has increase and also, the study of their satisfaction with above mentioned programme.

Methodology

Methodological basis for the study is the literature about UHP including scientific works and internal data. The study covers qualitative and quantitative components. Qualitative study implies identification of viewpoints of primary health personnel and healthcare experts with regard to UHP. In terms of Qualitative component in-depth interviews were conducted with participation of the experts of the social protection Agency, primary health medical personnel and healthcare experts. Stratification random sampling was used for selection of primary health institutions. The types of medical institutions (outpatient, family medicine centers), as well as participation in the UHP were used for stratification variables. 6 primary health institutions were selected. Stratification random selection method was used for selecting beneficiaries. Due to inaccessibility to sampling database, the respondents were selected at the primary health institutions randomly. In terms of the study, 500 beneficiaries were questioned.

The study applied face-to-face interviewing method. The interviewing was done through special structured questionnaire. The questions were separately developed for each target group. In terms of the project, two different types of questionnaires were used – for family doctors and primary health beneficiaries. Obtained data were analyzed by descriptive statistics.

Study limitations include random selection of primary

health institutions, which were selected only in Tbilisi due to lowering expenses and possibility of conducting questionnaire within short time.

The study was approved by the Committee on the Ethics of the Ilia State University (Permit Number: 89-324). Participants provided informed consent. The consent was written.

Results

After introduction of UHP, the visits of population for medical services have significantly increased [3]. In February-April 2014 Experts of WHO and USAID carried out assessment of one year results of UHP. Simultaneously, with the technical assistance of USAID/HSSP the phone survey of the population on the satisfaction of obtained services and qualitative study of service providers and beneficiaries (Focus groups) for assessment of UHP were carried out [3]. The survey showed that majority (96.4%) of the beneficiaries of UHP are satisfied or highly satisfied with hospital and/or urgent outpatient service, 80.3% of beneficiaries are satisfied or highly satisfied with planned outpatient service [3]. 84.1% of respondents on the planned outpatient component and 78.2% of planned hospitalization and urgent outpatient component indicated that the financial support of population is the most positive part of the Universal Health [3]; also, most of the beneficiaries mentioned the rights to free choice is one of the core positive factors of Universal Health. 7.6% of respondent's dissatisfaction was mainly about the length of the waiting period for obtaining needed service [3].

According to our study, before introduction of UHP, 23% of respondents consulted family doctor, (10% of which did more than 3 times), 67% didn't address at all. After introduction of the programme, 49% of respondents have addresses 1 to 3 times, 27% more than 3 times, 21% of respondents didn't address at all (diagram 1).

Prior to introduction of UHP, 34% of respondents addressed specialized doctor 1-3 times, 18% - more than 3 times, 48% didn't address at all. After introduction of the programme, 52% of respondents consulted with specialized doctor 1-3 times, 18% - more than 3 times, 30% didn't address at all. 67% of beneficiaries mentioned that they addressed specialized doctor via referral of a family doctor. 14% mentioned that they directly addressed

Diagram 1.
Percentage comparison of visits of beneficiaries prior and after introduction of Universal Health Programme.

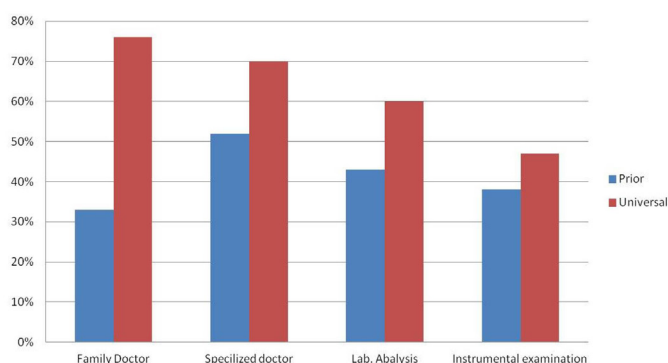
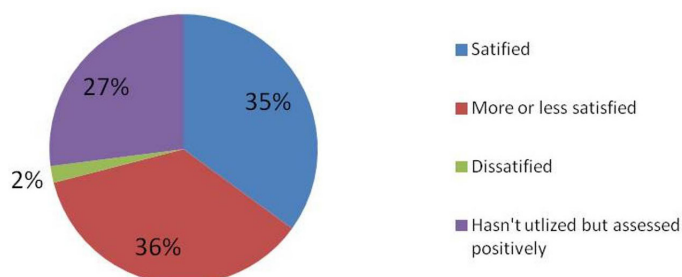


Diagram 2.
Study of satisfaction of beneficiaries with Universal Health Programme.



specialized doctor without referral of family doctor; according to 19% of respondents they addressed specialized-doctor sometimes directly and sometimes through a referral (see diagram 1).

Prior to introduction of programme 31% of respondents took laboratory analysis during one year 1-3 times, 12% - more than 3 times, 57% didn't use this service. During the last one year, in terms of UHP, 38% of beneficiaries took laboratory examination 1-3 times, 22% - more than 3 times, 40% - didn't take at all (diagram 1).

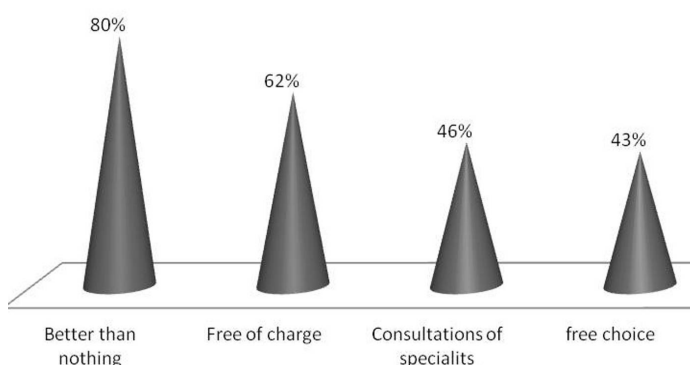
As for instrumental examination, prior to introduction of the programme, during the year, 26% of respondents used it 1-3 times, 12% - 3 times, 62% didn't use it. After introduction of UHP during one year 37% of respondents took instrumental examination 1-3 times, 10% - more than 3 times, 53% - didn't use it all (diagram 1).

Satisfaction level of beneficiaries with UHP is following: 35% of respondents are satisfied with the programme, 36% - are less satisfied, 2% express dissatisfaction, 27% hasn't utilized the programme yet but positively assess its existence; 53% of respondents state that prior they used private/corporate insurance; out of them 37% give priority to private/corporate insurance, 16% - give priority to UHP (diagram 2).

Table 1.
Percentage distribution of consultations of beneficiaries with family doctors and specialized doctors, a year prior to introduction of Universal Health Programme (UHP) and after introduction.

Percentage (number) of visits of beneficiaries per day			
Family Doctor		Specialised Doctor	
Prior to UHP	After introducing UHP	Prior to UHP	After introducing UHP
50% (8-10)	70% (12-20)	100% (5-10)	60% (8-10)
40% (10-12)	30% (20-25)		40% (10-15)
10% (12-15)			
100% (8-15)	100% (12-25)	100% (5-10)	100% (8-15)

Diagram 3.
Positive sides of Universal Health Programme by assessment of beneficiaries.



In assessment of positive sides of UHP the majority of answers were "Better than nothing" (80%) and "free of charge" (62%). Other positive sides mentioned by beneficiaries were the possibility to obtain specialist consultations (46%), free choices of outpatient service and the doctor (43%) (diagram 3).

As for negative side of the project the beneficiaries basically mentioned dissatisfaction with co-payment (71%), as well as limited list of services (68%) and medicines (63%) covered by the programme and absence of reimbursement for stomatologic services (45%) (diagram 4).

In 6 outpatient clinics (three mixed types, two for juvenile and 1 for children) selected for study, 40 family doctors and 30 specialized doctors (pediatricians, neuropathologists ophthalmologists) were interviewed.

70% of family doctors mentioned that after introduction of UHP 15-20 patients visit them per day, and in 30% this number is 25. Half of the interviewed doctors stated that prior to introduction of UHP the visit number was 8-10, in 40% - 10-12, in 10% - 15 patients per day (Table 1). In case of specialized doctors, 60% have 10 patients per day, and 40% have 10-15 patients per day after introduction of UHP; prior to UHP maximum 10 patients consulted with specialized doctors per day (Table 1).

80% of interviewed family doctors think that visits have considerably increased after introduction of UHP; 20% of family doctors consider this increase to be - insignificant. 60% of interviewed specialized doctors thinks that after introduction

Diagram 4.
Negative sides of Universal Health Programme by assessment of beneficiaries.

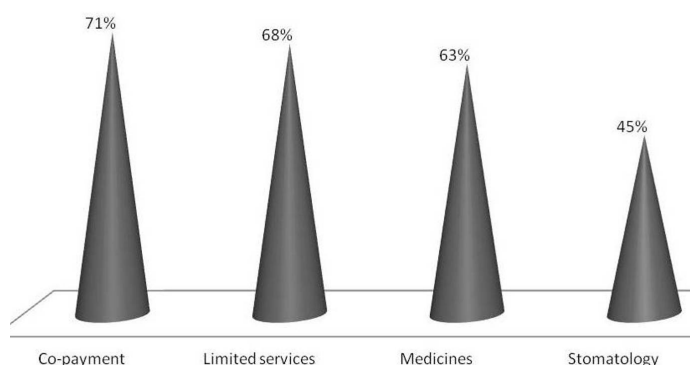
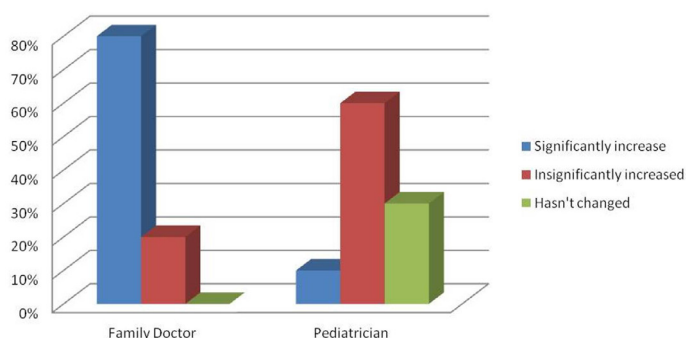


Diagram 5.

The dynamics of visits to family doctors and specialized doctors, after introduction of Universal Health programme.



of UHP the visits of patients has increased insignificantly, 30% considers the number of visits to be slightly increased and 10% of doctors thinks that the number has increased significantly. Among specialized doctors, the pediatricians think that the number of patients has dramatically increased after introduction of the programme for children of the age of 0-5 (diagram 5).

The Majority of Experts positively assessed UHP. According to them, the programme has many positive sides: financial accessibility to healthcare services, free choice of medical providers and doctors, treatment of many diseases, number of financed analysis and instrumental examinations.

According to expert's opinion, it is reasonable to extend outpatient service package and add some services, including coverage of some medicines to UHP.

Some experts think that the negative side of UHP is the long waiting time for planned surgical operations. Also, because of private insurance companies will lose clients hinder development of insurance market. Besides, the state fund will have monopoly on the insurance market and try to dictate fees to medical institutions; for short period it will result in decreasing medical service fees but in the long term perspective it will affect the quality of services. Further, it will negatively affect medical institutions, which will try to reduce work places and salaries.

Conclusions and recommendations

According to the study results, despite the serious advancements, there are still problems associated with the primary health care. The UHP together with many positive factors, has many flaws that need corrections.

It is necessary to increase the financial accessibility of services linked with high expenses. In this regard, the volume of these services shall be increased. It is reasonable to engage private insurance companies in implementation of state health care programmes for effective use of available scarce resources. This will increase competitiveness and the quality on the healthcare market together with decreasing of healthcare expenses.

Declaration of competing interests

The authors declare that they have no competing interests.

Authors' contributions

T.V. contributed to the study design, acquisition of data, analysis and interpretation of data, and prepared the manuscript. R.J. contributed to the study design, acquisition of data, analysis and interpretation of data, and commented on manuscript drafts.

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Zygomatic Air Cell Defect – a Brief Review

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The aim of this paper was to analyse the literature published in the research related to zygomatic air cell defect. An internet search using keyword Zygomatic air cell defect was used to obtain details of the published literature in this research area from 1985 to 2016. The data available in the articles were analyzed in terms of ethnicity, prevalence, occurrence (unilateral/bilateral) and gender distribution.

Keywords: Zygomatic air cell defect, prevalence, imaging.

Introduction

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Zygomatic Air Cell Defect (ZACD) previously referred to as pneumatized articular eminence, it refers to the formation of an asymptomatic air-filled cavity within the bone. [1] These are accessory cells in the zygomatic process and articular eminence of the temporal bone that do not extend further anteriorly than the zygomatico-temporal suture. [2] The other synonym is called Pneumatized Articular eminence (PAT) was coined by Tyndall and Matteson in the year 1985. [2]

It is believed that the pneumatization of the bone occurs as a result of opportunistic epithelial expansion into the bone. [3] Mastoid air cells commonly undergo pneumatization but sometimes accessory air cells develop in the other locations of the temporal bone like the zygomatic arch region. [4]

Clinical importance of the zygomatic air cell defect

The ZACDs are located in close proximity to the temporomandibular joint (TMJ) and hence provide a path of least resistance to various pathologies of the joint such as fractures even with minor trauma, inflammation and tumors. [5,6] With recent advances in implants, long zygomatic implants are sometimes used as partial or complete alternative to maxillary bone augmentation

procedures. [7] Zygomatic bone is surgically manipulated in esthetic contouring procedures which is popular in Asian population. [8] The air cells are believed to play an important role in the development of temporal acoustic dissipation, protection from external trauma, and minimize the skull mass. [9] Another important clinical factor is that the ZACDs must be differentiated from pathologies like aneurysmal bone cyst and central hemangioma of the zygomatic region because they mimic the features of these pathologies as all these lesions need special concern but in different ways. [4,10]

Al Faleh et al stated that ZACD causes increased fragility of the temporomandibular joint by structurally weakening the roof of the glenoid fossa due to pneumatization. They also stated that in such cases any massive trauma to the jaws leads to the impingement of the head of the condyle into the middle cranial fossa. [11]

Studies involving zygomatic air cell defect

Studies involving zygomatic air cell defect have been conducted using different imaging modalities over the years also taking into consideration occurrence (unilateral/bilateral) and gender distribution. [12-27] (Table 1)

Table 1. Showing prevalence rates, gender distribution, occurrence (unilateral/bilateral) and imaging modalities used in different studies on ZACD.

Researchers and year	Sample size	Prevalence	Male	Female	Unilateral cases	Bilateral cases	Imaging modality
Tyndall & Matteson 1985 [13]	1061	28 (2.6%)	13	15	23	5	Panoramic radiography
Kaugars et al 1986 [5]	784	8 (1%)	1	7	4	4	Panoramic radiography
Carter et al 1999 [14]	2734	40 (1.5%)	20	20	32	8	Panoramic radiography
Hofmman et al 2001 [15]	1084	20 (1.8%)	9	11	16	4	Panoramic radiography
Orhan et al 2005 [16]	1006	19 (1.9%)	7	12	12	7	Panoramic radiography
Orhan et al 2006 [17]	1049	17 (1.62%)	9	8	10	7	Panoramic radiography
Yavus et al 2009 [18]	8107	83 (1.03%)	42	41	56	27	Panoramic radiography
Orhan et al 2010 [19]	1405	48 (3.42%)	12	36	32	16	Panoramic radiography
Miloglu et al 2011 [20]	514	41 (8%)	16	25	31	10	Cone beam CT
Zamaninaser A et al 2012 [4]	2600	94 (3.6%)	35	59	70	24	Panoramic radiography
Ladeira et al 2013 [21]	658	140 (21.3%)	-	-	76	64	Cone beam CT
Shokri et al 2013 [12]	1563	98 (6.2%)	33	65	64	34	Panoramic radiography
Srivathsa et al 2014 [22]	1688	50 (2.96%)	23	27	38	12	Panoramic radiography
Arora et al 2014 [23]	600	19 (3.16%)	6	13	9	10	Panoramic radiography
Khojastepour et al [24]	3098	64 (2.1%)	23	41	40	24	Panoramic radiography
Ribeiro-Nascimento et al 2015 [3]	698	23 (3.3%)	13	10	7	16	Cone beam CT
Mosavat et al 2015 [25]	239	51 (21.3%)	25	26	35	16	Cone beam CT
İlgüy et al 2015 [26]	111	73 (65.8%)	19	54	31	42	Cone beam CT
Arora et al 2016 [27]	6825	133 (1.94%)	84	49	112	21	Panoramic radiography

CT - Computed Tomography

Prevalence of zygomatic air cell defect

A wide variation of the prevalence rates of zygomatic air cell defect have been observed ranging from as low as 1% (Kaugars et al 1985) to as high as 65.8% (İlgüy et al 2015) [5,26]. However most of the researchers who evaluated the ZACD using the panoramic radiograph have found prevalence rates lower than 5%. [5,13-19,22-24,27] only one study conducted by Shokri et al in 2013 using panoramic radiography stated a prevalence rate of 6.2%. [12]. In contrast most of the studies using the cone beam computed tomography (CBCT) have reported higher prevalence rates. [20,21,25,26] however only one study by Ribeiro-Nascimento et al (2015) using CBCT has reported lower prevalence rate of 3.3%. [3] Prevalence rate as high as 68.5% also have been reported in studies conducted using CBCT. [26]

Gender variation in the occurrence of ZACD

Most of the studies have reported of a higher rate of occurrence in the female study subjects when compared to male study, however the difference have not been statistically significant in many of these studies. [5,12,13,15,16,19,20,22-24,26] Some studies have reported no gender predilection between male and female study subjects. [14,17,18,25] However very few studies have shown a higher male predilection. [27]

Occurrence of ZACD (unilateral/bilateral)

In majority of the studies the occurrence of ZACD was unilateral. [13-27]. Equal number of unilateral and bilateral occurrence have been reported rarely. [5]

Ethnicity and occurrence of ZACD

Although studies on ZACD have been conducted at many countries most of the published literature originates from population based studies from Iran [4,12,24,25], Turkey [16,17,18,19,20] India [22,23,27], USA[5,13, 14], Brazil [3,21], Germany [15]. the prevalence rates of ZACD was observed to more in studies conducted on the Iranian, Turkish and American population when compared to Indian population, however it is to be noted that most of the recent studies on the later population has been conducted with CBCT therefore more prevalence was observed owing to better visualization of the ZACD.[26,25]

Imaging modality used to asses ZACD

Majority of the studies published before 2010 have been carried out using panoramic radiography.[13,16,19]. However after 2010 researchers have preferred using cone beam computed tomography for their research.[3,20,21,25] The increased use of CBCT by the researchers could be attributed to its higher diagnostic accuracy compared to panoramic radiography especially in areas like the medial portion of the articular eminence.[28] Panoramic radiographs present with disadvantages like superimposition of adjacent structure, distortion, and low resolution. CBCT overcomes the superimposition problem thus is an ideal imaging modality for the assessment of air spaces in the skull base.[20]

With recent advances in the imaging modalities it would be easier to detect the presence of ZACD and differentiate it from other pathologies which may have similar radiographic features thus preventing unnecessary surgical intervention as demonstrated in few published cases.[29]

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Azerbaijan Medical Association

ABOUT

The Azerbaijan Medical Association (AzMA) is the country's leading voluntary, independent, non-governmental, professional membership medical organization for physicians, residents and medical students who represent all medical specialties in Azerbaijan.

Association was founded by Dr. Nariman Safarli and his colleagues in 1999. At the founding meeting, the physicians adopted the Statutes and Code of Ethics of the Association. The AzMA was officially registered by Ministry of Justice of Azerbaijan Republic in December 22, 1999.

Since its inception, the AzMA continues serving for a singular purpose: to advance healthcare in Azerbaijan.

- Founded in 1999, the AzMA provides a way for members of the medical profession to unite and act on matters affecting public health and the practice of medicine.
- We are the voice of physicians who support the need for organized medicine and want to be active within their profession.
- We are the representative for Azerbaijan doctors on the world-wide level and the voice of Azeri physicians throughout the world.

MISSION

The mission of the Azerbaijan Medical Association -is to unite all members of the medical profession, to serve as the premier advocate for its members and their patients, to promote the science of medicine and to advance healthcare in Azerbaijan.

GOALS

- Protect the integrity, independence, professional interests and rights of the members;
- Promote high standards in medical education and ethics;
- Promote laws and regulation that protect and enhance the physician-patient relationship;
- Improve access and delivery of quality medical care;
- Promote and advance ethical behavior by the medical profession;
- Support members in their scientific and public activities;
- Promote and coordinate the activity of member-specialty societies and sections;
- Represent members' professional interests at national and international level;
- Create relationship with other international medical associations;
- Increase health awareness of the population.

The association's vision for the future, and all its goals and objectives are intended to support the principles and ideals of the AzMA's mission.

INTERNATIONAL RELATIONSHIPS

Since its establishment, AzMA built close relationships with many international medical organizations and national medical associations of more than 80 countries. The following are the AzMA's international affiliations:

- Full membership in the World Medical Associations (WMA) (since 2002)
- Full membership in the European Forum of Medical Associations (EFMA) (since 2000)
- Full membership in the Federation of Islamic Medical Associations (FIMA) (since 2002)
- Associate membership in the European Union of Medical Specialists (UEMS) (since 2002)

Especially the year 2002 remained with memorable and historical events for AzMA such as membership to the World Medical Association (WMA). Today we are extremely pleased to represent our Association and to be a part of the WMA family.

MEMBERSHIP

A person with medical background, who accepts and follows the AzMA Statutes and AzMA Code of Ethics, may become a member of the Association. The Code of Ethics of the Association shall be the members' guide to professional conduct.

Membership in the AzMA is open to:

- Physicians residing and practicing in Azerbaijan and in abroad.
- Medical students enrolled at medical universities or schools
- Retired physicians

Members can access a special members only area of the AzMA website designed to provide the most up-to-date, and timely information about organized medicine in our country.

To the non-member, we hope you'll discover, through our website how valuable Azerbaijan Medical Association is to medicine in Azerbaijan and will join us.

MEDICINE'S VOICE IN AZERBAIJAN

As the largest physician membership organization in Azerbaijan the AzMA devotes itself to representing the interests of physicians, protecting the quality of patient care and as an indispensable association of busy professionals, speaks out with a clear and unified voice to inform the general public and be heard in the highest councils of government.

The AzMA strives to serve as the Medicine's Voice in Azerbaijan.

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WMA International Code of Medical Ethics

Adopted by the 3rd General Assembly of the World Medical Association, London, England, October 1949 and amended by the 22nd World Medical Assembly, Sydney, Australia, August 1968 and the 35th World Medical Assembly, Venice, Italy, October 1983 and the 57th WMA General Assembly, Pilanesberg, South Africa, October 2006.

DUTIES OF PHYSICIANS IN GENERAL

- A PHYSICIAN SHALL always exercise his/her independent professional judgment and maintain the highest standards of professional conduct.
- A PHYSICIAN SHALL respect a competent patient's right to accept or refuse treatment.
- A PHYSICIAN SHALL not allow his/her judgment to be influenced by personal profit or unfair discrimination.
- A PHYSICIAN SHALL be dedicated to providing competent medical service in full professional and moral independence, with compassion and respect for human dignity.
- A PHYSICIAN SHALL deal honestly with patients and colleagues, and report to the appropriate authorities those physicians who practice unethically or incompetently or who engage in fraud or deception.
- A PHYSICIAN SHALL not receive any financial benefits or other incentives solely for referring patients or prescribing specific products.
- A PHYSICIAN SHALL respect the rights and preferences of patients, colleagues, and other health professionals.
- A PHYSICIAN SHALL recognize his/her important role in educating the public but should use due caution in divulging discoveries or new techniques or treatment through non-professional channels.
- A PHYSICIAN SHALL certify only that which he/she has personally verified.
- A PHYSICIAN SHALL strive to use health care resources in the best way to benefit patients and their community.
- A PHYSICIAN SHALL seek appropriate care and attention if he/she suffers from mental or physical illness.
- A PHYSICIAN SHALL respect the local and national codes of ethics.

DUTIES OF PHYSICIANS TO PATIENTS

- A PHYSICIAN SHALL always bear in mind the obligation to respect human life.
- A PHYSICIAN SHALL act in the patient's best interest when providing medical care.
- A PHYSICIAN SHALL owe his/her patients complete loyalty and all the scientific resources available to him/her. Whenever an examination or treatment is beyond the physician's capacity, he/she should consult with or refer to another physician who has the necessary ability.
- A PHYSICIAN SHALL respect a patient's right to confidentiality. It is ethical to disclose confidential information when the patient consents to it or when there is a real and imminent threat of harm to the patient or to others and this threat can be only removed by a breach of confidentiality.
- A PHYSICIAN SHALL give emergency care as a humanitarian duty unless he/she is assured that others are willing and able to give such care.
- A PHYSICIAN SHALL in situations when he/she is acting for a third party, ensure that the patient has full knowledge of that situation.
- A PHYSICIAN SHALL not enter into a sexual relationship with his/her current patient or into any other abusive or exploitative relationship.

DUTIES OF PHYSICIANS TO COLLEAGUES

- A PHYSICIAN SHALL behave towards colleagues as he/she would have them behave towards him/her.
- A PHYSICIAN SHALL NOT undermine the patient-physician relationship of colleagues in order to attract patients.
- A PHYSICIAN SHALL when medically necessary, communicate with colleagues who are involved in the care of the same patient. This communication should respect patient confidentiality and be confined to necessary information.

**We work together for the
sake of healthy future of
Azerbaijan!**



Azerbaijan Medical Association

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