Maxillofacial defects and TMD’s in Saudi Arabia.

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ABSTRACT
This tentative review aims to show the relative incidence and possible types of maxillofacial defects those commonly recorded all over the world with a great concentration on the Kingdom of Saudi Arabia. Also it shows the possible methods that could be used to stand on the exact situation in and collect data from tough and rural regions of the kingdom areas like ours in Aseer.

Keywords: Maxillofacial defects; Saudi Arabia; Cleft; TMJ

Introduction
Maxillofacial defects are usually classified as congenital or acquired based on aetiology. Although congenital malformation could present in different forms, both road traffic accidents and surgical treatment of maxillofacial pathologies are the common causes of acquired type of defects. Many prevalence studies on dentofacial deformities have been carried out in central region of Saudi Arabia. However, a comprehensive epidemiologic data is required to stand on the exact situation in other areas of the kingdom. Aseer province of the south western part is situated on a high plateau and contains the country’s highest peaks. The tough nature of the land together with the uncontrolled distribution of population usually makes accurate data collection difficult. The official reports of 2007-2010 indicated that 2,563,000 humans are habituating the total land area (81,000 km²) of Aseer. Table 1 shows some more details about population in Aseer. This tentative review aims to show the relative incidence and possible types of maxillofacial defects those commonly recorded all over the world with a great concentration on Aseer, Kingdom of Saudi Arabia.

Clefts
Stevenson et al in a 1996 WHO survey concluded that cleft lip, cleft palate, cleft lip and palate in Manila, Philippines reaches 1.5/1000 while in Mexico City, Mexico ranges between 0.42 and 0.93/1000 in different hospitals. Padilla and Gonzalez reported from a cleft palate clinic in Puerto Rico that an increase in the incidence rate of cleft lip, cleft palate and cleft lip and palate by 10/10000 live births recorded between 1952 and 1979. Chapman (1983) also reported the incidence rate of facial cleft in New Zealand Maoris to be 2.27/1000 births.

Vanderas (1987) based on his review on the incidence of cleft lip and palate among different races concluded that most of the reported cases of clefts were associated with other malformations and possible syndromes. At the same time, Gundlach and Maus (2006) tries to declare the situation of clefts among different races as follows: complete clefts (i.e. primary plus secondary palate affected) were most common with left sided ones being reported most often; males were more prone to have a cleft of the primary palate than females and females were more often affected by clefts of the secondary palate than males. A study done on Chinese and Japanese live birth prevalence rates of non-syndromic cleft lip with or without cleft palate revealed significantly lower incidence in comparison to those of Asians. Accordingly, it looks important for any population-based cleft studies to include careful delineation of population groups, syndromes, cleft type, and birth status. Some of hospital-based studies in Saudi Arabia have shown a very high incidence rate of cleft lip and palate 2.19/1000 live births. Congenital anomalies have been reported to be one of the major causes of referral to the Neonatal intensive care unit (NICU) of Aseer Central Hospital, Abha. 59.1% of all newborn referred to NICU of Asir Central Hospital during six years were having Major congenital anomalies with anomalies in eye, ear, neck and face accounting for 4.1 percent and cleft lip and palate accounting for 3.6% alone.

A study done at College of Dentistry, King Saud University, Riyadh, Saudi Arabia to find out the characteristics of dentofacial deformities in Saudi population. Among 115 patients who were assigned for orthognathic surgery showed that most Saudis who seek treatment were presented with Angle’s skeletal Class II and III deformity (39.1-46.1%) and little of them (14.8%) with class I deformity.

Trauma
Traumatic injuries in the head and neck region can be considered as one of the main causes of maxillofacial defects. A study done in Britain on facial fractures revealed high incidence of sports fractures, while the number of industrial accidents is surprisingly low. It is estimated that 23-34 million people are injured all over the world every year in road crashes. In Europe every year, more than 50,000 peoples get killed in road accidents, and more than 150,000 remain disabled. total number of road accidents in Malaysia exceeded 223,000 in 1999. Deaths due to road traffic accidents took the greatest toll on the Asia and Pacific region where 44% of the world’s road deaths occurred and only 16% of the total motor vehicles are found. Road traffic accidents are also common in Saudi Arabia. Morbidity and mortality rates as a result of road traffic accidents look comparable to those reported for heart diseases and cancer. Head and facial injury were the main effects of road traffic accidents in Riyadh, accounting for 30% of injuries and causing 26% of the deaths.

In Saudi Arabia, road traffic accidents recorded between 1971-1997 did result in 564,762 people died or were injured in i.e. equal to 3.5% of the total population in Saudi Arabia. From...
An evaluation of trauma registry data in Aseer region revealed that all victims of 85 RTAs were males with a mean age of 27 years. Injuries were dominated by musculo-skeletal (including maxillofacial injuries), neuro, thoracic and abdominal traumas respectively. Unfortunately, pre-hospital data was deficient and most of the hospital in-patient’s information was taken from the nurse’s notes.

Pathologies

In a worldwide estimate for prevalence of cancer, the highest incidence of cancer was reported in North America with 1.5% of the population affected and diagnosed in the previous 5 years (about 0.5% of the population in years 4-5 and 2-3 of follow-up and 0.4% within the first year of diagnosis). Which is 3.2 million individuals. Western Europe and Australia and New Zealand show similar percentages with 1.2% and 1.1% of the population affected (about 3.9 and 0.2 million cases respectively). Japan and Eastern Europe form the next batch with 1.0% and 0.7%, followed by Latin America and the Caribbean (overall prevalence of 0.4%), and all remaining regions are around 0.2%. Cancer prevalence in developed countries is very similar in men and women, 1.1% of the sex-specific population, while in developing countries the prevalence is some 25% greater in women than men.20

Acquired defects in maxillofacial region can have multiple aetiologies. In a study reporting the incidence of head and neck cancer at Aseer Central Hospital, Abha, KSA between 1987 and 1992, 204 new cases were diagnosed. Skin cancer was the most common among males followed by oral and pharyngeal cancers. Among females, thyroid cancer was the most common followed by skin and oral cancers.

Intraoral cancers in Saudi Arabia are mostly reported from the southern regions of the Kingdom. The frequency is lower than in India and Pakistan but higher than Western countries. The chewing of the chewing tobacco-like substances, Shamma and Khat, in the southern region of Jazan and neighbouring Yemen, contribute to the high frequency of oral cancer in these regions.22 Study done in Northern Saudi Arabia concluded that most common sites for cancers in the whole population irrespective of sex were gastrointestinal (20.1%), head and neck (18.2%), followed by breast (10.5%) and skin (8.6%).23

Temporomandibular disorders (TMDs) involve a num¬ber of clinical problems that includes the masticatory musculature, temporomandibular joint (TMJ), and its associated structures.24 The prevalence of TMDs in general populations...
around the world has been found to be about 75% for whom having at least one sign of TMDs and 33% for whom having at least one symptom of TMDs. The Assessment of TMJ and its supporting structure has been nominated to be essential during routine dental examination. This procedure helps establish a baseline of TMDs symptoms and signs for all dental patients, so that they can be monitored during recall visits, if treatment is not indicated. Disclosure of dental patients with moderate or severe TMDs conditions is possible at that time and their treatment can then be instituted. Regular assessment of TMD would also help prognostic plans and medico legal documentations.

The American college of Prosthodontics, consequently, did issue a special form to be employed for performing initial TMD screenings on all routine dental patients. From an epidemiological perspective, Dworkin et al. have recommended the described epidemiologic approach for TMD diagnostic studies. Other investigators provided useful compilations of clinical examination together with questionnaire items which are suitable for use in large scale studies.

Conclusion

This review is a humble step toward realizing and accepting the presence of maxillofacial defects in the region. It allows us to have a brief understanding on the epidemiological and medical nature of these defects and guides us toward the application of the creative approaches of treatment. The estimates of incidence and prevalence of maxillofacial defects in this region will form a baseline data that addresses and helps manage that kind of health problems. The proceedings plan to further enrich our data base system with valuable information about maxillofacial defects including TMDs among Saudi population residing in the tough terrains of Aseer. Using a unified questionnaire approach looks the most reliable approach; however a thorough clinical examination should be followed whenever it is possible as a step to manage the problem.

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