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World Day of the Sick: Guest Comment

Dr. Saransh Srivastava

Life in any form is considered the greatest gift of all. The great almighty made this world for a peaceful co-existence among all beings. The theme chosen for this year's The World Day of the Sick which is an awareness day, or observance, in the Catholic Church which was instituted on May 13th, 1992 by Pope John Paul II. Beginning in 1993, it is celebrated every year on February 11, the memorial of Our Lady of Lourdes. It is not a liturgical celebration, but it seeks to be for all believers "a special time of prayer and sharing, of offering one's suffering".¹

The National Association of Catholic Chaplains (NACC) organizations offer variety of resources – prayer cards, sample prayer services, homilies, video reflections and more – that will assist you to celebrate World Day of the Sick in your parish. The National Association of Catholic Chaplains has developed resources to help with the planning and celebration of World Day of the Sick. The resources include suggestions and prayers that can be used by individuals as well as by dioceses, parishes, health care institutions, and other organizations.²

Pope John Paul II had been diagnosed with Parkinson's disease as early as 1991, an illness which was only disclosed later, and it is significant that he decided to create the World Day of the Sick only one year after his diagnosis.³ The pope had written a great deal on the topic of suffering and believed that it was very much a salvific and redeeming process through Christ, as he indicated in his apostolic letter *Salvifici Doloris*.⁴

He chose the memorial of Our Lady of Lourdes for the date of the observance because many pilgrims and visitors to Lourdes, France, have been reported to have been healed at the Marian Sanctuary there through the intercession of the Blessed Virgin. The pope also venerated the sanctuary of Harissa in Lebanon.

In 2005, the World Day of the Sick had a special

significance since the ailing pope later died on April 2nd that year. Many people had gathered in St. Peter's Square in Rome to pray for him as he lay dying. In 2013, Pope Benedict XVI announced his resignation on this day, and he gave his declining health as his reason for retiring.¹

The World Day of the Sick — in its preparation, realization and objectives — is not meant to be reduced to a mere external display centring on certain initiatives, however praiseworthy they may be, but is intended to reach consciences to make them aware of the valuable contribution which human and Christian service to those suffering makes to better understanding among people and, consequently, to building real peace.

Indeed, peace presupposes, as its preliminary condition, that special attention be reserved for the suffering and the sick by public authorities, national and international organizations, and every person of good will. This is valid, first of all, for developing countries — in Latin America, Africa and Asia — which are marked by serious deficiencies in health care. With the celebration of the World Day of the Sick, the Church is promoting a renewed commitment to those populations, seeking to wipe out the injustice existing today by devoting greater human, spiritual, and material resources to their needs.³

To sick people all over the world, the main actors of this World Day, may this event bring the announcement of the living and comforting presence of the Lord. For you, health-care workers called to the highest, most meritorious and exemplary testimony of justice and love, may this Day be a renewed spur to continue in your delicate service with generous openness to the profound values of the person, to respect for human dignity, and to defence of life, from its beginning to its natural close.³

In the end, I would like to thank the entire editorial



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team of IHRJ for providing me a platform to pen my thoughts on the important occasion of World Day of the Sick .

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Malaria in Pregnancy in Nigeria: A Literature Review

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Malaria is caused by the parasite plasmodium which can be spread to humans through the bite of an infected mosquito. Of the five types of plasmodium (*P. Falciparum*, *P.Ovale*, *P. Malaria*, *P. Vivax* and *P. Knowlesi*), the plasmodium falciparum is the deadliest and affects the lives of almost 40 per cent of the world's population with pregnant women and children under-five years of age being the most affected. This mini-review involved the collation of findings from recent studies in regards to the prevalence of malaria infection among pregnant women and infants. A systematic analysis of recent literature on the prevalence of malaria in pregnancy from many authors was carried out and the facts synthesized to make an easy read. From the analysis of literature, Ten Thousand women and 200,000 babies were reported to be dying annually from complications of malaria in pregnancy which recorded a prevalence of 85 per cent in sub-Saharan Africa. More so, Fifty per cent of pregnant women were discovered to be carrying plasmodium falciparum in their placenta without even experiencing malaria signs/ symptoms, and this development was reported to have been responsible for Twenty per cent of stillbirths and 11 per cent of all maternal deaths. Malaria infection is considered a major threat to the lives and well-being of pregnant women and infants. Therefore, stakeholders should ensure that every clinical diagnosis of malaria in pregnancy is confirmed with a laboratory plasmodium falciparum-based diagnosis before the administration of antimalarial drugs. Furthermore there should be a stepping -up on the distribution of insecticide treated nets alongside enlightenment of pregnant women on ways of preventing mosquito bite. Instituting the aforementioned approaches is key to improving the health- seeking behaviour of pregnant women in particular and the wider population in general thus enabling them to stay malaria free throughout the period of pregnancy and infancy.

KEYWORDS: Malaria, Pregnancy, Plasmodium, Infant

INTRODUCTION

Malaria affects the lives of almost 40 per cent of the world's population, and the high risk group being pregnant women and young children (under 5-years of age) and about 10,000 women and 200,000 babies die annually because of malaria in pregnancy. Furthermore, 85 per cent of malaria cases in the world occur in sub-Saharan Africa, as there were 214 million malaria cases and 438,000 malaria deaths globally in 2015. Also, in sub-Saharan Africa 20 per cent of pregnant women attending ante natal clinic tested positive for the malaria parasite (*Plasmodium Falciparum*) as 72 per cent of pregnant women had at some point during their pregnancy suffered malaria infection, because 50 per cent of pregnant women carry the malaria parasite in the placenta without noticing it, which makes them three (3) times more likely to suffer from other severe diseases.¹⁻³

EFFECTS OF MALARIA IN PREGNANCY

Malaria is responsible for 20 per cent of still births and 11 per cent of all maternal deaths by way of spontaneous abortion, maternal anaemia, placental pathologies,

infant mortality and morbidity, intrauterine growth retardation and low birth weight. Other effects include: threatened abortion, miscarriage, premature delivery and low birth weight which all have serious public health implications for the mother, the fetus and newborn.^{4,5}

MALARIA IN PREGNANCY: THE NIGERIAN EXPERIENCE

In Nigeria, overall malaria prevalence stood at 79.5 % , in Lagos and Enugu States the prevalence during pregnancy was reported to be 52 and 99 per cent respectively, and having devastating effects on pregnant women, the fetus and the new born.^{6,7}

INCREASED RISK FOR MALARIA DURING PREGNANCY

Mosquito (the vector that transmits the malaria parasite) has affinity for pregnant women because pregnancy causes women to release a greater than normal amount of Carbon Dioxide (CO₂) which adds to the odoriferous secretions during pregnancy, which



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attracts mosquitoes, coupled with the increased body surface and increased blood flow in the skin, exposing the pregnant woman to mosquito bite. Also, the accumulation of parasitized red blood cells in the placental vessels triggers an inflammatory process which has been known to cause an immune activation in the placental tissue which would not have occurred in a non-pregnant woman.^{1,4,8,9}

LABORATORY DIAGNOSIS: THE KEY TO PROPER CASE MANAGEMENT

Clinical diagnosis is not a reliable malaria diagnostic technique especially in sub-Saharan Africa due to inadequate local epidemiological data on malaria and the presence of other febrile ailments which have similar signs and symptoms with malaria. Therefore all suspected malaria cases (clinical diagnosis) should be confirmed with a laboratory test as a concurrence World Health Organization's policy that all clinical diagnosis must be confirmed by a laboratory parasite-based diagnosis before the administration of antimalarials to prevent malaria misdiagnosis and drug resistance.¹⁰

GLOBAL MALARIA CONTROL STRATEGY: THE STORY SO FAR

World Health Organization report shows a decline in malaria cases by 25 per cent globally and 33 per cent in Africa between 2000 and 2015, with a decrease in both the incidence and death rates by 37 and 60 per cent respectively, a development associated with increased malaria prevention mechanisms and health seeking behaviour in reducing the burden of malaria in pregnancy. Further efforts include the use of insecticide treated net (ITN) and effective case management of malaria and anaemia in pregnant women.^{1,7,11}

In Nigeria, a national programme to eliminate malaria was launched in 2015, meanwhile, in 2004 Nigeria adopted World Health Organization's three (3) pronged strategy for combating malaria in pregnancy (MiP), which are: (1) intermittent preventive treatment in pregnancy (IPTp) through the directly observed therapy with Sulphadoxine-Pyrimethamine (SP), (2) distribution and use of insecticide treated net (ITN), and (3) case management of MiP.¹²

INTERNATIONAL COLLABORATION TOWARDS ERADICATION AND CONTROL OF MALARIA IN NIGERIA

Nigeria became the 17th Presidential Malaria Initiative

(PMI) country in 2010 although, pre-PMI malaria funding in Nigeria was \$18 million and rose to \$43.6 million in Fiscal Year (FY) 2011, and was projected at \$43.2 million in FY 2012. Furthermore, Malaria Action Programme for States (MAPS) a PMI-funded integrated malaria project which was to cover the period 2010 to 2015 was implemented in six (6) states in Nigeria, among them were: Benue, Cross River, Ebonyi, Nasarawa, Oyo and Zamfara. Furthermore, before the support from USAID/PMI, Nigeria received a total of \$280 million from World Bank for the Malaria Booster Programme which supported seven(7) states and some national level activities up until 2009. Also, U.K. Department for International Development (DFID) supported Nigeria with a \$100 million five-year programme under the Support for Nigeria malaria programme (SuNMaP) in 2008. Lastly, Global Fund also provided \$500 Million Round 8 Malaria Grant that began in 2009 and expired in 2014.^{12,13}

CONCLUSION

Malaria infection is a major threat to the lives and well-being of pregnant women and young children (under - five years of age).

RECOMMENDATIONS

Stakeholders should ensure that clinical diagnosis must be confirmed by a laboratory parasite-based diagnosis before the administration of antimalarials, and the distribution of insecticide treated nets alongside health education to improve health-seeking behaviour with the aim of preventing malaria infection among pregnant women and young children.

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Coronavirus (CoV) Infection: The Pandemic Public Health Issue

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The headlines hitting the news worldwide are talking about the recent outbreak of the coronavirus infection (COVID-19) that started as an epidemic in China by the end of year 2019 and became a public health emergency after a pandemic spread within a span of few weeks. With no curative measure in hand, this ailment is killing victims at the rate of almost 2% of the affected ones. This review focuses on general information regarding coronavirus, pathological findings from biopsy sample of a previously published case and the standard preventive recommendations prescribed by various researchers and health authorities.

KEYWORDS: Coronavirus, Public Health, Outbreak

INTRODUCTION

Coronavirus family is a huge family of viruses that cause illnesses ranging from mild common cold to life-threatening and fatal Severe Acute Respiratory Syndrome and Middle East Respiratory Syndrome. A novel coronavirus (nCoV) is an emerging strain that has never been identified in humans previously.¹ The current outbreak of coronavirus disease that was first reported from Wuhan, China, in December 2019 and more than 26 countries have been affected.² Coronaviruses are transmitted between animals and people. Most common animals involved are cats, bats, cattle and camel. Reported investigations have found that SARS and MERS virus were transmitted to humans from civet cats and dromedary camels respectively.

Several known coronaviruses are circulating in animals that have not yet infected humans. The subjects affected initially in this outbreak had some link to a seafood and animal market, suggesting animal to person spread. In a short span of time, a substantial increase in number of patients indicated person to person spread as the latter reportedly did not have a direct exposure to seafood or animal markets. Common signs of infection include fever, cough, shortness of breath and breathing difficulties. In more severe cases, infection can cause pneumonia, severe acute respiratory syndrome, kidney failure and even death. The healthcare workers engaged in care of patients with COVID-19 and other close contacts of persons with this disease are at a high risk as compared to the general public.¹

COVID-19 is an acute resolved disease but it can also be fatal with a death rate of 2% resulting mainly due to massive alveolar damage and progressive respiratory failure.^{2,3} More than 70000 cases have been confirmed and over 2000 deaths have been reported and the stats are increasing with time. The International Health Regulations Emergency Committee of the World Health Organization declared this COVID-19 outbreak a “public health emergency of international concern” on January 30th, 2020.⁴ The diagnostic aid that can identify COVID-19 in respiratory samples from clinical specimens is a real time Reverse Transcription-Polymerase Chain Reaction (rRT-PCR) test which was developed by Centre for Disease Control and Prevention. Although much is not known about this illness, lymphopenia is a common sign in the affected patients and might be a critical factor associated with severity and fatality of this illness.³

Pathological findings: Zhe Xu et al. reported a fatal case of 50-year-old corona virus victim and described the pathological findings.⁵ Histological examination was performed in the samples taken from lung, liver, and heart tissue of the patient. The lung tissue showed interstitial mononuclear inflammatory infiltrates dominated by lymphocytes, bilateral diffuse alveolar damage with cellular fibro-myxoid exudates, desquamation of pneumocytes and hyaline membrane formation, indicating acute respiratory distress syndrome. Also found in the intra-alveolar spacer were multinucleated syncytial cells with atypical enlarged



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pneumocytes characterized by large nuclei, amphophilic granular cytoplasm, and prominent nucleoli showing viral cytopathic-like changes. The specimens from liver biopsy showed moderate microvascular steatosis and mild lobular and portal activity. In the heart tissue, no substantial damage was seen except a few interstitial mononuclear inflammatory infiltrates.⁵

The authors also reported severe immune injury (reduced counts of peripheral CD4 and CD8 T cells, overactivation of T cells, manifested by increase of Th17 and high concentrations of cytotoxic granules in CD8 T cells, high proportions of HLA-DR and CD38 double-positive fractions) in their patient which was evidenced by flow cytometric analysis of the peripheral blood.⁵ Although more research work is required on the pathogenesis of this disease to formulate therapeutic measures, this prestigious work by Zhe Xu et al provides new insights into the pathogenesis of the disease that is currently a subject of worry on a global basis.

Preventive recommendations: Preventive measures prescribed by various researchers and health authorities include regular hand washing with soaps, covering mouth and nose when coughing and sneezing, frequent use of sanitizers, eating meat and eggs that are thoroughly cooked and avoiding close contact with subjects with symptoms of respiratory illness. Flu vaccine and anti-viral drugs are recommended as respiratory diseases are on the rise due to change of season. Healthcare professionals dealing with patients are more at risk, so a proper travel history should be noted for each patient, especially for those with fever and respiratory symptoms. In case of a positive history, one must inform the local health authorities. Wearing a mouth mask and protective eye gear would be of great help in prevention. Hand hygiene is of key importance both for health professionals and general public.

World Health Organization's advice on Coronavirus disease (COVID-19) for the public asks to stay aware of the latest information on the COVID-19 outbreak, available on the WHO website and through the

national and local public health authority, to regularly and thoroughly clean hands with an alcohol-based sanitizer or wash them thoroughly with soap and water, to maintain at least a distance of 3 feet between yourself and anyone who is coughing or sneezing, avoiding touching eyes, nose and mouth, covering mouth and nose with bent elbow or tissue while coughing or sneezing and disposing of the used tissue immediately and seeking medical attention in case of fever, cough, breathing difficulties and other respiratory symptoms.⁶

The need of the hour is to focus the global efforts on preventing the spread of this virus and mitigating its impact. The government should work in collaboration with the state and local authorities to respond to this public health emergency. Also, multidisciplinary teams should be deployed to support state health departments with clinical management, contact tracing, and communications. The researchers across the world are putting efforts to look out for remedies and are constantly trying to develop curative measures. Hope their hard work manifests into good results soon and this world gets a winning chance to combat the horrendous Coronavirus infection.

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A Case Report of Apert Syndrome in a Fifty-Eight Year Old Female

POOJA GAUR*

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Defined as a rare type I acrocephalosyndactyly syndrome which is clinically characterized by dysmorphic facial features, craniosynostosis, and severe syndactyly of the hands and feet, Apert Syndrome represents an autosomal dominant inheritance which occurs due to the gene mutations in the receptors of the fibroblast growth factor. Oral lesions include tooth crowding, reduction in the size of the maxilla, impacted teeth, anterior open-bite, ectopic eruption, delayed eruption, thick gingiva and supernumerary teeth. The present case report describes a 58 year old female patient reported with the features of Apert's syndrome such as dysmorphic facial features, ocular anomalies, syndactyly and oral features. The case was referred to a specialized centre of clinical care for further treatment.

KEYWORDS: Acrocephalosyndactylia, Apert syndrome, Craniosynostosis

INTRODUCTION

1906, Eugene Apert, a French Physician first described a rare type I acrocephalosyndactyly syndrome and termed it as "Apert syndrome".¹ Its characteristic clinical features were severe syndactyly of the hands and feet, craniosynostosis and dysmorphic facial features.² This syndrome is autosomal dominant and is due to mutations in the fibroblast growth factor receptors (FGFR-2) gene at the locus 10q26.^{3,4}

Most cases result from a genetic mutation observed in the father and its prevalence at birth is 1:65,000^{2,6} and among offsprings, both genders are equally affected with this syndrome.^{5,6} A few sporadic cases of this syndrome are reported, and develop because of new mutations in genes.¹

Cases with Apert syndrome document distinctive clinical phenotypic features in which the coronal sutures fuse prematurely (at less than 3 months) and this leads to a cone-shaped head known as acrocephalic (Cone-Shaped) coupled with a high prominent forehead and shortened antero-posterior diameter. The mid face is hypoplastic. Hypertelorism, down slanting palpebral fissures and proptosis are the ocular anomalies. The nose is wide and short due to which the nasal bridge is depressed.^{1,2,5,7} Anomalies of the elbows and shoulders, skeleton, viscera, and impaired mental function due to central nervous system anomalies have been reported by previous studies.^{6,8}

Oral signs include pseudocleft, high-arched palate,

transverse, and sagittal maxillary hypoplasia, dental crowding, delay in dentition, ectopic teeth, disarrayed/crowded teeth. The mandible is generally normal in size, and pseudoprognathism can be seen. Symptoms related to CNS, cardiac, gastrointestinal, and urogenital system, and vertebral anomalies have been rarely been reported.⁹

Herein, we have aimed to present a 58-year-old female patient diagnosed with Apert syndrome based on clinical manifestations.

CASE REPORT

A female patient aged 58 years, reported to our OPD for regular dental check-up. The patient reported Apert syndrome and was the only case of her family.

The clinical triad of craniosynostosis, midface hypoplasia, and syndactyly of the hands and feet which is the characteristic of Apert Syndrome was present in the patient.

The patient had abnormal shaped skull which was characterised by a high, full forehead and a flat occiput which may be due to the premature closure of one or more of the joints (fissures) between the bones of the skull and early fusion of the coronal sutures representing Craniosynostosis.

The midface of the patient was incompletely developed. She had flat face, orbits were shallow, small nose, maxillary hypoplasia, and a narrow palate with a



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bifid uvula (Figure 1) along with cleft soft palate (Figure 2). The patient had varying forms of osseous and cutaneous syndactyly leading to fusion of fingers (Figure 3). Other clinical features which were present in the patient includes ocular anomalies (proptosis, hypertelorism, slanting palpebral fissures & right eye divergent strabismus) (Figure 4). Reduction in the size of the maxilla, anterior open-bite of the maxilla, supernumerary tooth, tooth crowding with ectopic tooth eruption were features present in oral cavity (Figure 5).

The patient was counselled properly, provided dental care and was referred to a specialized centre of clinical care for special needs patients.

DISCUSSION

Eugene Apert, in 1906, described the triad consisting of syndactyly of the hands and feet, dysmorphic facial features, and craniosynostosis as the characteristic clinical features of this particular syndrome.¹ With mutations in the fibroblast growth factor receptors (FGFR-2) gene at locus 10q262,4, a rare autosomal dominant heritage was linked to the syndrome. The FGFR2 gene enables coding of a protein called fibroblast growth factor receptor -2 gene. This protein belongs to one of the four FGFRs that are responsible for the formation of blood vessels, wound healing, embryonic evolution, and regulation of cellular division, growth, and maturation in an individual.



Figure 1. Bifid Uvula

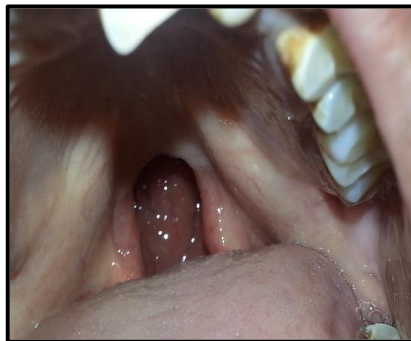


Figure 2. Cleft Soft Palate



Figure 3. Syndactyly of the Hands



Figure 4. Proptosis, Slanting Palpebral Fissures and Right Eye Divergent Strabismus



Figure 5. Supernumerary Tooth, and Crowding with Ectopic Tooth Eruption

The well established clinical and oral features seen in this case report and are in agreement with the cases described in the literature. Clinically the syndrome is characterized by premature fusion of the coronal suture and hypoplastic midface.^{5,6}

There have been instances in the literature where Anomalies of the elbows and shoulders, viscera, skeleton and central nervous system^{3,5} or abnormalities of the upper and lower respiratory tracts^{1,3} have been reported in some affected individuals. However, the case reported here did not present any related complaint of these anomalies during clinical examination.

From a dental aspect, Combined orthodontic and periodontal treatment protocols are required for the effective clinical management to improve oral health in such patients.

CONCLUSION

For the effective planning and treatment of patients suffering with Apert's syndrome, a multidisciplinary approach provided by dentists, plastic surgeons, neurosurgeons, ophthalmologists and geneticists is solicited.

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Restoring a Fractured Endodontically Treated Incisor using Fiber Post: A Case Report

GAYATHRI KM¹, PRASAD PK^{*1}A
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Coronal fractures of the anterior teeth arising after endodontic treatment are sequelae of dental trauma. Endodontically treated teeth presents a higher risk of biomechanical failure than vital teeth. Posts are needed for restoring teeth with insufficient coronal tooth structure to retain a core for definitive restoration. Fiber posts are more easily and safely removed "by hollowing them out from the inside". This present case report depicts a 23 year old male patient with fracture of tooth number 21 which had undergone an RCT 8-10 months ago and was restored using fiber post.

KEYWORDS: Endodontics, Fracture, Post, Restoration

INTRODUCTION

In comparison to vital teeth, endodontically treated teeth pose in increased risk of biomechanical failure, and hence, posts are needed for restoring such teeth especially those having insufficient coronal tooth structure to retain a core for further restoration.¹ The selection of an appropriate post material plays a significant impact in the biomechanical performance and an ideal post material should have acceptable modulus of elasticity, compressive strength and thermal expansion. In addition, the esthetics should be similar to those of dentin and it should be fully capable to bond to root dentin and without causing any harm to the dentinal tissue.²

However, the only material that can substantiate all these properties can be none other than dentin. Therefore, researchers are constantly finding a post material which has properties almost similar to dentin and hence, a most of the fiber posts contain either carbon fiber or quartz fiber and they have the ability to flex with the root when under stress.

In routine clinical practice, the usage of fiber posts are finding an increased application. Studies document that fiber posts strengthen the root when used with a resin luting cement with several short-term clinical studies report a high success rate of these posts.³ However, an important caveat regarding fiber posts is whether they should allow movement of the core during function or parafunction as if a post (which is thinner in diameter) has the same modulus of elasticity as the dentin, shall flex more under a load and lead to leakage under the crown and buildup area.

Fiber posts (excepting a South American post design that has a metal wire running through its long axis) are more easily and safely removed "by hollowing them out from the inside" and hence do not require much time and effort.^{4,5}

Another clinical drawback of a fiber post is its radiolucency, and hence, is impossible to detect radiographically and black color of the x-ray film and can go undetected at times.

This present case report depicts a 23 year old male patient with fracture of tooth number 21 which had undergone an RCT 8-10 months ago and was restored using fiber post.

CASE REPORT

A 23 year-old male patient reported to the our satellite clinic due to accidental trauma of the left central incisor. On examination, it was found that tooth 21 had undergone root canal treatment 8-10 months ago. However, tooth 21 was asymptomatic and the clinical crown was <2 mm. (Figure. 1)

The radiographic examination of tooth 21 revealed conical root canal with well condensed gutta percha filling extending 0.5 mm short of the radiographic apex. No periapical changes were noted in relation to tooth 21.

An occlusal model evaluation was done to assess the amount of space available for the post endodontic restoration to restore the tooth to function.



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Figure 1. Pre-operative Photograph

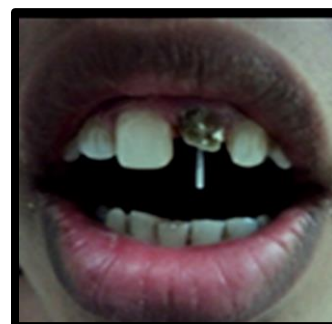


Figure 2. Insertion of Fiber Post



Figure 3. Core Build up and Crown Preparation



Figure 4. Post-operative photograph

In this procedure, tooth was isolated and gutta percha was removed with a small starter drill and the canal is prepared with the matching sized post drills and posts. All remnants of gutta percha must be removed from the walls of the post space to facilitate bonding. The fiber post was then inserted with the paracore material (Coltene) and shortened to the height of the core with a diamond bur before the bonding procedure is started.(Figure 2)

Core build and crown lengthening process was done by removing 2mm of keratinized gingival and underlying bone(Figure 3). Then the tissue was left for 1-2 week for healing by secondary healing process and maintaining the appropriate biological width.

Impressions were made, upper with the putty and lower with the alginate impression material. Casts were poured, and crowns were fabricated, after shade matching with 2M2 shade [VITA]. And then crowns were luted by GIC [luting type](Figure 4).

DISCUSSION

A trauma which leads to the fracture of anterior tooth/teeth is indeed a tragic experience for a patient

which requires immediate attention. This trauma also has the ability to cause a psychological effect of the trauma to the patient due to pain and poor aesthetics. Studies have documented a positive emotional and social response from the patient to the preservation of natural tooth structure.⁶ A considerable challenge is to restore the functional, esthetic, and biologic restoration of the fractured.⁷ There are many different treatment modalities for restoration of traumatized teeth such as composite resin restorations with or without pins and prosthetic repair.⁸

The number of endodontic procedures across the globe has increased in the past decade with highly predictable(positive) results and hence, restoration of teeth after endodontic treatment is becoming an integral part of restorative practice in dentistry. When a considerable amount of tooth structure has been lost as in case trauma or else, special techniques are needed to restore such a tooth. The teeth with minimal vertical tooth structure remaining for crown margins are subjected to flexion forces under function. As less cervical tooth structure is available, cervical stiffening from a more stiff post is needed to protect the crown margins and resist leakage.⁹ At the same

time, force dissipation from a more resilient post is needed to resist root fracture. The use of fiber post with core is also recommended as it can create a monobloc which is a multi layered structure with no weak interlayer interfaces.¹⁰

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The Impact of Using Social Media on Dental Treatment: An Online Survey

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INTRODUCTION: Social media is a mode of communication that allows a person to create and share information with others. Facebook, WhatsApp, Twitter, Google+, YouTube etc are some examples of social media applications and they allow people to communicate across the world. There is very less literature available that shows the effect of social media in esthetics in India.

AIM: To conduct an online survey to see the impact of using social media on esthetic dental treatments.

MATERIALS AND METHOD: 477 questionnaires were returned with responses and the data was entered into the MS excel sheet. Descriptive statistics was used for the frequency distribution and Chi Square was applied for the statistical relationship between male and female variables (at 5% significance).

RESULTS: Four hundred seventy-seven participants responded to this study through online forms. Most of the participants belonged to the age group of 26-35 years (n=256), followed by 18-25 years (n=137), 36-45 years and > 45 years (n= 55 & 29 respectively). The response of females was high (63.5%) when compared to males.

CONCLUSION: Females tend to follow dentists more as compare to males on social media. In dental practice, social media has become a widely used for exchanging and obtaining information.

KEYWORDS: Social Media, Esthetics, Survey

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INTRODUCTION

Social media is a mode of communication that allows a person to create and share information with others. Facebook, WhatsApp, Twitter, Google+, YouTube etc are some examples of social media applications and they allow people to communicate across the world.¹ India has 560 million active Internet users as of 2019. It is estimated that by 2021 there will be around 636 million active internet users in India. In 2021, it is estimated that there will be around 448 million social network users in India, a significant increase from 2019 where it figures at 351 million. Facebook is the most popular social networking site in the country. There are about 270 million Facebook users in India as 2019, placing India as the country with the largest Facebook user base in the world.²

The four key advantages of social media are: 1) This allows different people to collaborate 2) It allows users to create their own content through different media channels 3) It allows users to publish individual pieces of work and 4) This creates new research approaches.³ However smartphones are playing an important role in boosting the popularity of social media.⁴ In addition, publishing and exchange of healthcare material encourages the use of social media as a source of information in the search for a better understanding of

the differences in this field.⁵ It is not surprising that dentists are also showing a great interest in sharing the information and communicating with their patients through Social media. Social media is also an affordable way of publicizing a dental practice.⁶ It is necessary not to underestimate the power of social media and its effect on esthetic dental treatment choices. There is very less literature available that shows the effect of social media in esthetics in India. Therefore the aim of this study was to conduct an online survey to see the impact of using social media on esthetic dental treatments.

MATERIALS AND METHOD

This cross-sectional study was conducted with the help of online-electronic questionnaires from 10th December 2019 to 10th January 2020 after taking the ethical approval from the ethical committee of IDS Bareilly. Subjects less than 18 years of age were not included in the study. First part of the questionnaire was about the age and gender of the participants and in the second part various queries regarding the social media were asked.⁴ The questionnaire was constructed on Google Forms (www.docs.google.com). Five hundred questionnaires were distributed through different social media apps like WhatsApp, Facebook and



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Instagram. Reminders were given to the participants from time to time. 477 questionnaires were returned with responses and the data was entered into the MS excel sheet. Descriptive statistics was used for the frequency distribution and Chi Square was applied for the statistical relationship between male and female variables (at 5% significance)

RESULTS

Four hundred seventy seven participants responded to this study through online forms. Most of the participants belonged to the age group of 26-35 years (N=256), followed by 18-25 yrs (N= 137), 36-45 years and > 45 years (N= 55 & 29 respectively). The response of females was high (63.5%) when compared to males (36.0%). (Table 1)

VARIABLES	n=477
Age	
18-25 yrs	137 (28.7%)
26-35 yrs	256 (53.6%)
36-45 yrs	55 (11.5%)
Above 46 yrs	29 (6%)
Gender	
Male	172 (36.0%)
Females	303 (63.5%)
Responses from:	
Whatsapp	263
Facebook	145
Instagram	69

Table 1. Demographics of the Study Participants

Table 2 shows the various opinions of the participants when they were asked different questions regarding social media. When asked whether they followed a dentist on social media, 215 (45.0%) subjects were non-responsive, 182 (38.1%) of them agreed that they in-fact followed the dentist on social media, 80 (16.7%) of them opined that they did not. Among them, females tended to follow the dentist more than males on social media and this difference was statistically significant ($p=0.035$).

Most of the participants (83.9%) agreed that dentists should communicate with people through social media rather than conventional media (TV, newspapers, magazine) whereas 14.2% gave a negative response and very few (1.9 %) had no opinion regarding the same.

More than half of the participants (60.8%) responded positively when they were asked if social media was

their first choice for information regarding an esthetic dental treatment or clinic, notwithstanding 33.1% who felt otherwise and 6% did not respond to the same.

When asked about the validity of the information on social media, 56.6 % of them trusted it, 38.6% of them did not and 4.8% of them were non-responsive.

The results showed us that 54.5 % of the participants took their decision of choosing a dentist by their activity on social media which was not the case in 40.7% of the participants and 4.8% had no opinion regarding the same. This was particularly high among females when compared to males ($p=0.041$).

Furthermore the findings revealed that 28.0% of participants narrated their dental experiences on social media while majority of them (67.9%) did not feel it was important and 19% were non responsive.

Significant number of subjects (65.8%) were affected by the criticism of the dentist on social media while 29.3% of them did not consider social media while choosing a dentist and 4% of them were not sure. Females were found to be more affected about the dentist's image in social media than males and the difference between them was statistically significant ($p=0.023$).

On enquiring whether their choice of dental clinic was influenced by its representation on social media, most of them (68.8%) agreed positively, 27.3% did not agree and only 4% did not reply to this.

Similarly, before and after pictures of a dental treatment in social media was influential for 57.9% of the subjects but did not matter to 37.3% of respondents. Out of 57.9% of subjects, the difference was found to be statistically significant between males and females where females were more influenced with before and after pictures ($p=0.04$).

The findings revealed that 48.2% participants were influenced by the choice of dental treatment that a celebrity had spoken of on social media and almost same number of individuals (47%) contrarily disagreed. Also 48.2% of respondents relied on the advertisement of cosmetic treatment which was in contrast with the 45.7% of participants who did not agree.

Majority of the participants (65%) were not attracted by the different offers for esthetic treatment regardless of the quality, however 30.2% of respondents were

QUESTIONS	RESPONSES(%) (n=477)
1. Do you follow (dentist/dental clinic) in social media?	
Yes	182 (38.2%)
No	80 (16.8%)
No response	215 (45.1%)
2. Do you think that dentists should communicate with people through social media rather than conventional media (TV, newspapers, magazine)	
Yes	400 (83.9%)
No	68 (14.3%)
No response	9 (1.9%)
3. If you want to get information about an esthetic dental treatment or clinic, is social media your first choice for information?	
Yes	290 (60.8%)
No	158 (33.12%)
No response	29 (6.1%)
4. Do you trust the information you get from social media about dentistry and treatment options?	
Yes	270 (56.6%)
No	184 (38.6%)
No response	23 (4.8%)
5. Does your decision of choosing a dentist or dental clinic affected by the activity of their account?	
Yes	260 (54.5%)
No	194 (40.7%)
No response	23 (4.8%)
6. Do you write about your visit to the dentist or dental clinic in social media?	
Yes	134 (28.1%)
No	324 (67.9%)
No response	19 (4%)
7. When you read a criticism to a dentist or dental clinic in social media, would that affect your personal decision to visit the dentist or clinic?	
Yes	314 (65.8%)
No	140 (29.4%)
No response	23 (4.8%)
8. Would you visit a dental clinic because you visited or read their page on social media sites?	
Yes	328 (68.8%)
No	130 (27.3%)
No response	19 (4%)
9. Would you go to a dentist because you saw a before and after pictures in the social media?	
Yes	276 (57.9%)
No	178 (37.3%)
No response	23 (4.8%)
10. If you need to get an esthetic dental treatment, is your first choice a clinic that a celebrity tried or talked about in social media?	
Yes	230 (48.2%)
No	224 (47%)
No response	23 (4.8%)
11. Reliance on the accuracy of the results and displays advertisements which belong to cosmetic treatment?	
Yes	230 (48.2%)
No	218 (45.7%)
No response	29 (6.1%)
12. Does advertisement that contain special offers for different esthetic treatment attract you, regardless of the quality of treatment?	
Yes	144 (30.2%)
No	310 (65%)
No response	23 (4.82%)
13. If you saw on social media a friend or family member with a new smile, would you ask about the esthetic dentist or dental clinic they were treated in?	
Yes	396 (83.0%)
No	58 (12.2%)
No response	23 (4.8%)
14. Would you choose a dental clinic or dentist based on an advertisement by a celebrity on social media?	
Yes	164 (34.4%)
No	288 (60.4%)
No response	25 (5.2%)

Table 2. Responses to the Questions by the Study Participants

attracted to the same.

Almost all (83.0%) of the subjects would like to ask their friends or family about the esthetic dentist after seeing their pictures on social media and while very few of them (12.2%) would not be interested in same. Females were more likely to ask as compared to males and the results were statistically significant ($p=0.031$).

DISCUSSION

Social media sites enable users to create and share information. The first social media site was created by Andrew Weinreich in 1997. Most of the people use social media for learning, marketing, shopping, decision making etc. As these new technologies grow, they have the opportunity to influence the methods and procedures of many sectors. Use of social networking sites by health care providers and patients is also growing.⁴

The present study was conducted to see the impact of social media on dental treatment choices. In the present study a total of 477 subjects participated and amongst them, 303 (63.5%) were females which is in agreement to the study conducted by Alnjadat et al.⁷ In a survey, Hanna Krasnova et al. concluded that due to their emotional volatility, females use social media platforms more than males (they like to keep close ties and gain social information).⁸

In the present study less than half (38.2%) of participants were following a dentist or a dental clinic on social media which is in contrast with a study conducted by Awdah et al where 53.3% were following a dentist on social media.⁴

Significant number of participants (83.9) believed that the dentist should communicate with the people through social media which was in accordance to the study conducted by Tackeray et al where the participants appreciated the social media communication of health care providers.⁹ The reason for such belief was due to the fact that there would be direct communication with the dentist and the information that is passed on is credible without filtration or manipulation.

Almost 56% of the participants trusted the information regarding a dentist or a dental clinic from social media. According to Hamm et al. a high percentage of people used internet as a source of information regarding health and it is the third most

common activity on internet.¹⁰ Another study conducted in 2013 by Pew Research Center shows that 72% of adult internet users found online support for medical information.¹¹ The main reasons for using the internet were insufficient appointment time with physicians and obstacles to obtaining qualified health services. Convenience and coverage were considered to be the main advantages, while health information's credibility and trustworthiness may be the limitations.

Most of the participants in the present study (68.8%) visited the dentist's social media page which is in contrast to a study conducted by Parmar N et al where a total of 64% (296/460) never searched their medical doctors and dentists on social media.¹²

In the present study females were more influenced with before and after treatment pictures ($p=0.04$) and this finding was in agreement with a study conducted by Alalawi et al where females were more interested in the positivity of reviews, before-and-after images, and the qualifications of the dentist ($p < 0.05$).¹³

Majority of the participants (65.8%) were affected by the criticism of dentist on social media which is similar to the study conducted by Awdah et al.⁴

In our study majority (83%) of the participants were affected by their family or friend's dental treatment. This was in accordance with a study conducted by Fox S et al where 68% of all adults request health information from a friend or family member.¹⁴ These findings were also in agreement with a study conducted by Parmar N et al. where, patients appreciated recommendations from friends and family, for a dentist or a dental clinic.¹²

Very few of the participants that is 34.4% were affected by the advertisement of a dentist or a dental clinic by a celebrity on social media which was in contrast to a study conducted by Ajwa N et al. where 82.3% of the patients were affected by the advertisement in social media.¹⁵

CONCLUSION

Females tend to follow dentists more as compare to males on social media. In dental practice, social media has become a widely used for exchanging and obtaining information. The current findings indicate that there is a potential for dental practices to compete for increased patient interaction and involvement through a more active social media presence.

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Comparative Effect of Topical Local Anaesthetic Spray & Gel in the Reduction of Pain on Periodontal Probing in Individuals with Untreated Chronic Periodontitis

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INTRODUCTION: The experience of pain during dental procedures is a concern to many individuals. In periodontal practice, the first meet between the patient and the periodontist is usually a periodontal examination.

AIM: The present study aims to compare the efficacy of local anaesthetic gel & spray in the reduction of pain on periodontal probing in a group of individuals with untreated chronic periodontitis.

MATERIALS AND METHODS: Thirty participants meeting the inclusion criteria were included in the study and had full-mouth periodontal probing done at six sites per tooth. The participants were divided into 2 groups: Group I;15 patients with LOX 2% gel and Group II;15 patients were assessed with lignocaine spray. Intragroup comparison was done using paired t-test and Analysis of Variance was done for inter group comparison.

RESULTS: The pre and post VAS score of the two groups over the periods were recorded of 2 minutes & 5 minutes. In Group I, the mean VAS at 2 min decreases comparatively from the base-line & remained lower significantly at 5 min as compared to the baseline. In contrast, in Group II, it decreased comparatively at 2 minutes but increases at 5 minutes and reaches almost the baseline value.

CONCLUSION: For early pain relief, study found LOX 2% gel more effective than lignocaine spray in the of untreated chronic periodontitis.

KEYWORDS: Lignocaine, Pain, Periodontitis

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INTRODUCTION

Examination and evaluation of any response to periodontal therapy are measured most of all through the surrogate variable of periodontal probing depth (PD) and its derivatives (attachment loss/clinical attachment level).¹ The experience of pain during dental procedures is a concern to many individuals. In periodontal practice, the first encounter between the patient and the periodontist is usually a periodontal examination. Probing of periodontal pockets to determine the extent of the disease is an essential part of this examination and may cause pain in some individuals. Periodontal probing has been reported to be a significantly painful experience for as many as 15-77% of patients with untreated periodontal disease, mainly attributable to the fact that periodontal tissues are in their most inflamed state.²⁻⁴

It is important that the periodontist at this encounter is sensitive to the discomfort level that the probing may entail.

Quantification of pain as a measurement is inherently difficult because it has both physical and psychological aspects. A common method used in pain studies is the Visual Analog Scale (VAS). It has been revealed

previously to be simple to use, consistent, and valid.⁵⁻⁶

Injection anaesthesia is an established method,⁷ but the unwanted side effects of prolonged anaesthesia, anaesthesia of adjacent structures (lips and/or tongue) and the psychological trauma of receiving multiple invasive “injections” makes it impractical.⁸

Topical anaesthetics (jellies, ointments, or sprays) are preferred because they produce less post procedure numbness, but problems relating to lack of efficacy attributable to inadequate depth of penetration, uncontrolled spreading, insufficient duration of action, and difficulties of administration have limited their use.^{7,9-13}

MATERIAL AND METHODS

The clinical trial was conducted in the Department of Periodontics, Sardar Patel Post Graduate Institute of Dental & Medical Sciences, Lucknow, Uttar Pradesh, India. The Ethical Committee and Review Board of the Institute approved the study protocol. A total 30 subjects were selected from patients who reported to the Department of Periodontics. The protocol was clearly explained to all the patients and informed



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consent was obtained from all recruits.

Study Population: A total of 30 participants (17 males and 13 females, aged 27-71 years; mean age: 43.90 ± 11.04) meeting the inclusion criteria were included in this study and had full-mouth periodontal probing done at six sites per tooth.

Inclusion criteria were: (1). 22-71 years of age, (2). Patients with at least 20 natural teeth, (3). Patients should not have undergone SRP in previous 12 months, (4). Patients with chronic periodontitis.

Exclusion criteria were: (1). Allergy to local anesthetics, (2). Patients with coagulation disorders/or an anticoagulation therapy, (3). Patients suffering from any psychiatric disorder with chronic pain, (4). Patients taking non-steroidal anti-inflammatory drugs in 3 days before participation in the study (5). Patients having acute periodontal pain, pulpitis, abscesses, or other acute infections (6). Ulcerative lesions in the oral cavity.

The 30 selected patients were divided into two groups of 15 subjects each. They are as follows:

Group I: 15 patients with LOX 2% gel

Group II: 15 patients were assessed with LIGNOCAINE spray for reduction of pain during periodontal probing.

The following standardized materials and equipment/armamentarium were used for the purpose of study:

- LOX 2 % JELLY® (Lignocaine Hydrochloride Gel) (Figure 1)
- LIDOCAINE TOPICAL SPRAY™ (Figure 2)

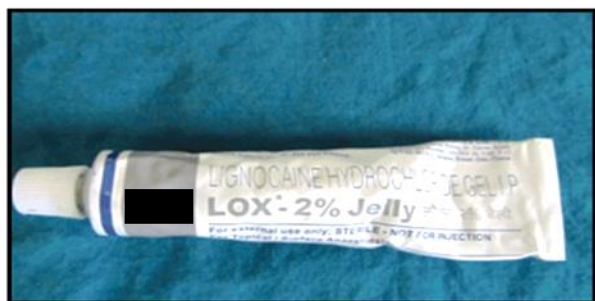


Figure 1. LOX 2% Jelly (Lignocaine Hydrochloride Gel)

First, quadrant-wise full mouth periodontal probing at six sites per tooth was carried out using UNC 15 probe (Figure 3) and scores were recorded by Visual analog scale



Figure 2. Lidocaine Topical Spray

(VAS). Starting with upper right quadrant, the areas were dried using a sterile gauze piece following adequate isolation with cotton rolls. In Group I LOX 2% gel was administered around each of the gingival margins of the teeth and also into the periodontal pockets with the help of syringe and was left in situ for a period of 2 min. The gel was washed with wash spray and periodontal probing was carried out. Pain was assessed by a 0-10 VAS. After completion of recording details in one quadrant, same procedure was performed on all remaining quadrants and readings were recorded.



Figure 3. Periodontal Probing at Six Sites per Tooth

For Group II, Lidocaine Topical Spray was sprayed around the gingival margin of the teeth and also into the periodontal pockets and was left in situ for a period of 2 min. Recording of the VAS score was similar to Group I.

To determine the efficacy of pain while during periodontal probing, the following approach was used:

- Excellent (absence of pain) — VAS score reached 0.
- Good (light pain) — VAS score reached 1, 2, or 3.
- Unsatisfactory (moderate pain) — VAS score reached 4, 5, or 6.

- d). Unsatisfactory (strong pain) — VAS score reached 7, 8, or 9.
- e). Bad (intolerable) — VAS score reached 10.

Statistical Analysis: Data were summarised as Mean ± SE (standard error of the mean). Groups were compared by repeated measures two-way analysis of variance (ANOVA) and the significance of mean difference within (intra) and between (inter)groups was done by Tukey’s HSD (honestly significant difference) post hoc test. A two-tailed ($\alpha=2$) $p<0.05$ was considered statistically significant. Analysis was performed on SPSS software (windows version 17.0).

RESULTS

The present study compares the effect of tropical local anaesthetic spray and gel in reduction of pain on periodontal probing in individual with untreated chronic periodontitis. Total 30 age and sex matched patients were randomized equally into two groups and treated with LOX 2% gel (Group I) or LIGNOCAINE SPRAY (Group II). The primary outcome measure of the study was pain (VAS score) assessed at pre -procedure (baseline) and post procedure (after 2 min and after 5 min). The objective of the study was to compare the VAS score between the groups.

The pre and post VAS score of two groups over the periods are summarised in Table 1 and Figure 4. In Group I, the mean VAS decreased significantly after the application and remained lower as compared to baseline. In contrast, in Group II, it decreased significantly at 2 minutes but increased at 5 min and reach almost baseline.

Time period	Group I	Group II	p value
Baseline	5.87 ± 0.22	5.60 ± 0.19	0.933
After 2 min	1.47 ± 0.24	1.93 ± 0.15	0.564
After 5 min	1.80 ± 0.17	5.40 ± 0.21	<0.001

Table 1. Pre and post VAS score (Mean ± SE, n=15) of two groups over the periods.

For each group, comparing the mean VAS score between the periods (table 2), Tukey test showed significant ($p<0.001$) decrease in VAS score in Group I at both post periods (after 2 min and after 5 min) as compared to baseline but did not differ significantly ($p>0.05$) between 2 min and 5 min i.e. found to be

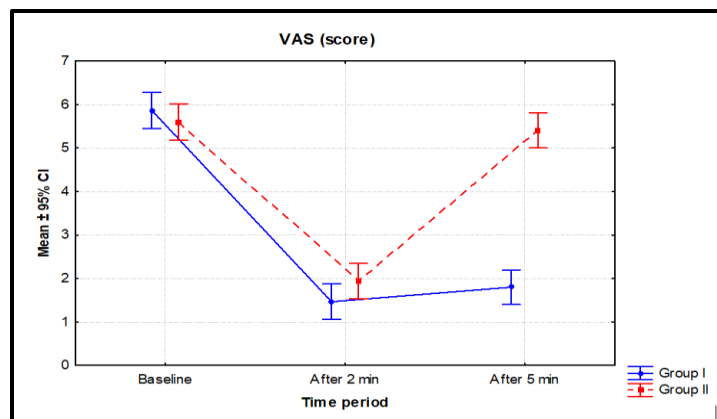


Figure 4. Mean VAS score of two groups over the periods. Vertical bar denotes 95% CI (confidence interval) of the mean.

statistically the same. In contrast, in Group II, it decrease significantly ($p<0.001$) at 2 min but not at 5 min as compared to baseline. Conversely, in Group II, it increased significantly ($p<0.001$) at 5 min as compared to 2 min.

Comparison	Group I	Group II
Baseline vs. After 2 min	<0.001	<0.001
Baseline vs. After 5 min	<0.001	0.963
After 2 min vs. After 5 min	0.748	<0.001

Table 2. For each group, comparison (p value) of mean VAS score between the periods by Tukey test

Similarly, for each period, comparing the mean VAS score between the periods (Table 1), Tukey test showed similar ($p>0.05$) VAS score between the groups at both baseline and after 5 min. However, at after 5 min, it was significantly ($p<0.001$) different and higher in Group II as compared to Group I.

DISCUSSION

Studies^{13,14} have shown that full-mouth periodontal probing can potentially be a more painful experience compared to SRP procedures when reported using a VAS pain scoring system. The extent of periodontal inflammation related to the pain during procedure of probing.¹⁵

The LOX 2 % gel used in this study contains 2% lidocaine (by weight) with the addition of a

thermosetting agent. LOX 2% gel becomes an elastic gel at body temperature when it flows into the pocket.

The results of this study demonstrated a highly significant reduction in pain compared to baseline values as measured on VAS scale in Group I after application of LOX 2 % gel.

On the other hand, lignocaine spray demonstrated less VAS score reduction compared to gels. This could be attributed to its unfavourable bioadhesion and poor possibility of the solution to confine at the preferred site. Due to its relatively weak surface anesthetic activity the onset of action is 112 seconds. Therefore 1-2 minutes of contact with the mucosa is essential.

Topical anaesthetic spray and gel have both advantages and disadvantages. The advantages of topical gels include better localization of drug in comparison with ointments and solutions, better control over systemic drug absorption, greater bioavailability and reduction in dosage.¹⁶ In addition a flavoured gel is better accepted by children.¹⁷ However, gels get diluted in the mouth with time, resulting in difficulty in maintaining prolonged mucosal contact resulting in inadequate anesthesia.¹⁸

Deepika et al.¹⁷ reported lower mean pain scores with lignocaine-dibucaine gel in comparison with benzocaine gel although statistically the difference was not significant. Topical anesthetic sprays have greater concentration of local anesthetic and are absorbed rapidly across the mucous membrane, thus providing effective anesthesia.

Nummit™ spray used in this study contains lignocaine hydrochloride in water-oil based emulsion, which increases tissue penetration and access into the nerve cell.¹⁹ However, there is difficulty in confining the effect of a drug to a small area and decreased bioadhesion thus decreasing its efficacy.²⁰ In addition, spray has been rated as unpleasant and also may cause difficulty in swallowing in some individuals.²¹ Despite these disadvantages, lignocaine gel and spray are commonly used in clinical practice than adhesive patches or disks as they increase the cost of the treatment phenomenally.¹⁶

CONCLUSION

Both the LOX 2% gel & Lignocaine spray are effective in reducing pain on periodontal probing in untreated chronic periodontitis patients.

However, LOX 2% is superior to Lignocaine spray in reducing pain for longer duration thus can be practiced as an adjunctive measure to reduce patient anxiety and attain patient cooperation.

However, further studies should be conducted to assess whether achieving any level of anesthesia and patient comfort during full-mouth probing will result in more accurate periodontal probing and to what magnitude.

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