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NEGLIGENCE OFDENTAL HEALTH FACILITY– A short case report.

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**Negligence Of Dental Health Facility – A short case report**

***ABSTRACT:***

A clinical dental practice involves handling of various toxic and non-toxic solutions for effective treatment delivery in any clinic set up. The inadvertent use of these solutions may sometimes leads to irreversible systemic complications. Proper care, dental operative protocols, rules and regulations for the disinfection, sterilization, storage of all the consumable and non-consumable materials and equipments should be predetermined and followed strictly to avoid unnecessary complications at the operative chair. The present paper report us about the inadvertent use of a foreign solution in lieu of a local anesthetic solution during a simple dental extraction and series of complications occurred thereafter. The suggested standard protocols should be followed to overcome these complications at the dental operatory area. It is also suggested to the dental councils to implement standard policies and amendments to enforce effective supervision among the dental staff and auxiliaries to overcome/avoid such nuances/complications occurring thereof.

Keywords: Formalin, Local anesthetic agent, Saline, Sodium hypochlorite, Dental mal-practice.

**Negligence Of DentalHealth Facility– A Short Case Report**

***INTRODUCTION:***

Extraction of teeth is a relatively common procedure in dentistry performed under local anesthesia. Hopeless mobile teeth, grossly decayed tooth, irreparable damage to tooth due to trauma are few reasons wherein the extraction of teeth is advised. Improper care of extracted wound site results in post extraction complications. These complications range from severe to mild depending upon the procedure undertaken while extraction.

One of the reasons for the extraction of a tooth is by iatrogenic damage of tooth. Though very common complication yet limited sources of literature are noticed. This paper enlightens the complications raised due to iatrogenic damage and negligence among the dental staff auxiliaries and explains the possible treatment protocols to adapt for prevention of these iatrogenic accidents in the dental clinics. This clinical case report informs the complications raised due to the negligent attitude of the dental health facility during extraction ,which result in physical and psychological trauma to the patient. Use of Syringes in the dental operatory for loading clear solutions like saline and hypo, visually mimics the lidocaine hydrochloride anaesthetic solution. The dental personnel should pre-label the contents of solution on the syringe before loading the syringe with any solution. The soft tissue insult happens when an unlabeled loaded syringe is used to treat in the operatory chair. If an unlabeled foreign solution accidentally infiltrated during extraction, assuming it as a local anesthetic agent, it not only leads to damage of soft tissues but sometimes can be life threatening also.1-3 The present case is an accidental infiltration of a foreign solution instead of the local anesthetic agent resulting in soft tissue necrosis and superceding infection.

***CASE REPORT***

A 56 years old male patient reported to the private dental hospital in Hyderabad, India with a necrotic sloughing in the lower anterior labial vestibule & floor of the mouth and a sinus opening on the chin with active pus discharge extra-orally. There was a direct communication between the floor of the mouth & lower anterior labial vestibule underneath the base of the mandibleThe dental history reveals that extraction of failed root canal treated tooth was planned and a solution was injected into the mucosa for the extraction of the tooth, but failed to extract the tooth as a whole, since adequate anaesthesia was not achieved and ends up with a traumatic socket.

The post incident complications include stinging sensation at the site, two days later yellowish tissue mass appeared and the following eighth day patient noticed sinus opening near the chin with pus discharge.. The dentist referred the patient to our hospital, as he was not able to handle the case.

It was apparent that the reaction of tissues in the labial and lingual vestibular regions of the mandibule is due to the foreign solutions injected instead of lidocaine hydrochloride anaesthetic agent.

A detailed physical and general examination are initiated and planned for a surgical procedure on the 10th day, post the incident. A Mandibular CT scan shows favorable intact buccal & lingual cortices and surgical profile is advised before surgical intervention of the extracted site. The differential diagnosis is concluded as a granulomatous ulcer with sinus opening extra-orally or infected ulcer due to trauma.

**PROCEDURE*:*** The decision was made to surgically remove the necrotic slough under general anaesthesia taking considerations of the esthetic requirements of the patient. The consent of the patient, physician and anesthetist are obtained before the procedure. Vitals are recorded normal.

Necrotic slough was removed from both the vestibules, including the remaining root portion from the extraction socket. The excision in the lingual vestibule was done minimally and taken care not to impinge the vital salivary gland duct orifices. The skin adjacent to the sinus was excised & closed secondarily and tissues sent for the histo-pathological report. The floor of the mouth was closed secondarily; the esthetic concern of the patient was also taken into consideration. The bone surface intraorally was left to heal by secondary intention Patient discharged the following day with post-operative care instructions and reviewed after one week. After periodic visit recall over 3 weeks, post-operative healing was uneventful, the soft tissue was totally healed and there was no evidence of tissue necrosis and then the patient was referred for prosthodontic treatment to restore the functions.

The histo-pathological report shows chronic inflammatory lesion with pus, fibrin and proteinaceous substances, macrophages and macro-nuclear lymphocytes with bacterial involvement.

**DISCUSSION**

Dental Malpractice, or dental negligence is defined as an avoidable injury caused by a dentist who fails to take proper care.4 Any case where a dentist has performed poorly, negligently or inappropriately which results in avoidable harm being caused to a patient can lead to a dental negligence compensation claim. The type of dental claims can be divided into a) Injury: Dental malpractice, or dental negligence may involve harm to the patient, whether through poorly performed procedures, incompetence, or failure to diagnose.

b) Serious injury: Serious harm to a patient experiencing life changing injuries, due to unsafe practice. A dentist can cause serious infection due to unsafe practices, fail to diagnose a case of oral cancer, or improper use of dental tools resulting in permanent injury.5-6

According to the criminal negligence and liability of Indian Penal Code section 88, the act performed causing any harm to any person – if it is for the benefit of that person – is not a crime, provided the act which causes harm was done in good faith and or expressed or implied consent of that person, to suffer that harm, was obtained.7

Certain guidelines are framed by the General Medical Council of the United Kingdom about the information given to the patients during the consent process but there are still variations among these followed by the practicing surgeons..7,8

Very few cases in dentistry reported soft tissue necrosis following foreign material infiltration.9-11 Usually dental clinics do not label the contents of the loaded syringe. Most common substances which can be mistaken for local anesthesia by the dental care providers are formalin, sodium hypochlorite, hydrogen peroxide, spirit, fixer, developer and monomer solution.

In a survey conducted by Mahal and Shaw, it was noticed that one third of the dentists never follow Local Anesthesia test dose before the procedure and 48% of the dentists use it only when the history is suspicious. Though mandatory, this aspect is most neglected and under reported event in minor oral surgical procedures. In a study group of 1484 practioners, only one third of the practioners are aware of the rules and regulations for the safe disposal of empty Local anesthesia bottles.12

Few case reports have shown accidental infiltration of hypochlorite instead of the anesthetic solution. The clinical complications encountered were like pain, soft tissue necrosis and bone sequestration. Management of complications related to sodium hypochlorite has been described. Initially, the swelling should be treated with cold compresses. After 1 day, these should be replaced by warm compresses and warm mouth rinses to stimulate local microcirculation.10,11

Hospital admission and aggressive supportive measures must be considered in cases of the unfavourable clinical outcome. The patient should be informed that healing will take some days or even weeks, and that symptoms resolve completely in most cases. However, paresthesia might persist for a longer period if infiltrated near the nerve. Surgical intervention depends on the nature and severity of the incident. To reduce the acute pain, local anesthesia may be helpful along with the prescription of analgesics. The use of antibiotics is routinely recommended in these incidents, because of the presence of necrotic tissue and the risk of infection. Intravenous steroids, although not used in this case, have also been recommended.

**Precautions and lessons to be learned:**

An only trained person should be involved in labeling the clinical equipment. Loaded syringes should be disposed at the end of the day. Syringes should be loaded as and when required. All the solutions should be stored at the appropriate temperatures. Solutions should be checked for turbidity, sediments and change in color. All solutions should be noticed for their date of expiry before loading. Solutions should never be preloaded. All the toxic and non-toxic solutions are stored and loaded in a specially designated area, away from the operatory except the local anesthetic agent.13

The dentist should feel the moral and professional responsibility towards their patients in all the oral care delivery systems as well the general health, since solutions once injected cannot be withdrawn. Hence the operator has to be very careful while injecting the solution.14

A legally constituted body should be established to check periodically the proposed clinical establishment act to prevent the iatrogenic incidents.14,15. The council should frame the guidelines and establish the protocol check for the implementation of the guidelines established and take initiative to include a new amendment in the dentist act of their respective countries.

Suggested protocol to be followed to avoid inadvertent use of toxic and non-toxic solutions during oral care delivery system

1. Air tight formalin container should never be stored in the operatory area or in the surgical tray.
2. The biopsy specimen should be taken in a kidney tray to the formalin stored area, instead of taking the formalin to the surgical area.
3. The dentist should check personally the label & contents of the vial/ampoule before administration.
4. Performing the local anesthesia hypersensitivity test should be made mandatory.
5. Different storage areas should be designed for all the solutions like LA Vials in the refrigerators, formalin containers near the sink.
6. Sodium hypochlorite, hydrogen peroxide, saline should never be preloaded and stored in the syringes.
7. Developer and fixer solutions should be stored in the dark room area only.
8. The dentist should be aware and paste the details of the manufacturer, expiry date, the shelf life of all the solutions near to his working area.

**Conclusion**

**TO CONCLUDE**: **“*PRIMUM NON NOCERE”***

It’s the Hippocratic oath taken by the doctors and medical professionals, which means – “Do no harm” to the patient. It states that, given an existing problem, it may be better not to do something, or even to do nothing, than doing a wrong thing that can cause more harm to the patient. A negligence action which occurs in the dental office, cannot be framed as unintentional by the dentalhealth facility. The few suggested protocols in this paper helps the dentist and the supporting staff in avoiding the untoward incidents of accidental infiltration of solution and actions which harm the patient and provides a better care to the individuals in the dental operatory.

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