ORIGINAL RESEARCH PAPER

Dental Science

# DENTAL MANAGEMENT OF A PEDIATRIC PATIENT WITH NEPHROTIC SYNDROME- A REVIEW

**KEY WORDS:** Nephrotic syndrome, Dental caries, Dental sepsis, Bacteremia

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**ABSTRACT**

Nephrotic syndrome is one of the chronic glomerular diseases in the pediatric population. It presents clinical symptoms and biochemical symptoms which results from proteinuria, hypoproteinemia, hyperlipoproteinemia and hypoalbuminemia. Here, we present the case of a 5-year-old male child who came with pain in his lower left and right back tooth region. He was diagnosed with nephrotic syndrome 4.5 years back and undergoing treatment and taking medications for the same. Extractions were done instead of pulp therapy to eliminate any dental sepsis including any teeth which were considered doubtful. All the extractions were performed under suitable antibiotic coverage and with the consultation of physician in charge. Our case report emphasizes on treatment which could reduce the morbidity and potential mortality associated with bacteremia which can be caused by any oral disease or dental procedures in child patients with nephrotic syndrome.

## INTRODUCTION

Nephrotic syndrome is a condition which leads to leakage of greater amount of protein into urine, which might lead to swelling of tissues of the body and also increases the probability of catching infections. The disease mostly affects children aged 1 to 6 years old and the boys are more likely affected than the girls [1,2]. Every year one in 50,000 children are diagnosed with nephrotic syndrome.

The manifestations of childhood nephrotic syndrome are edema, albuminuria, hypoalbuminemia, hyperlipidemia. Some children may show additional sign and symptoms of hematuria, fever, laziness, irritability, or stomach pain, loss of appetite, diarrhoea and high blood pressure.

Literature indicates various dental findings like enamel hypoplasia, enamel opacities, uremic stomatitis, oral bleeding, decreased periodontal disease, reduced salivary flow, xerostomia, an increased tendency for calculus deposition reduced prevalence of caries, bad metallic taste, ammonia odour in patients with chronic renal failure (CRF) and End stage renal disease (ESRD)[3,4].

### Case Report

A six-year-old boy was brought to the Department of Pedodontics and Preventive Dentistry by his parents with the chief complaint of pain in his lower left and right back tooth region. Since 1 week, he was experiencing pain.

His medical history revealed that the patient was suffering from nephrotic syndrome for 4.5 years and undergoing treatment for the same.

Extraoral examination disclosed slight puffiness of face particularly around the eyes (Figure. 1)

**Figure 1: Extraoral picture showing slight puffiness of face**

Intraoral examination disclosed deep occlusal caries i.r.t 54, 64, 74, 75, 84, 85 and tender on percussion i.r.t. 74, 75, 84, 85 (Figure 2). IOPAs revealed radiolucency involving pulp with 74, 75, 84 and 85 (Figure 3-4).

**Figure 2: Intraoral Maxillary and mandibular occlusal view**

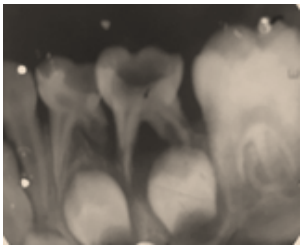

**Figure 3: Intraoral periapical radiograph of 74, 75**

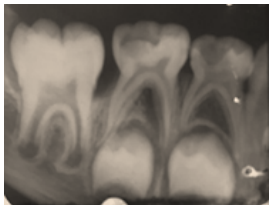

**Figure 4: Intraoral periapical radiograph of 84, 85**

Based on the history, clinical and radiographic assessment and examinations, a treatment plan was prepared and explained to the parents and written consent was obtained from parent, paediatrician and nephrologist. Following consent obtention, patient was prescribed to take Amoxicillin and Metronidazole IV two days before the start of dental treatment. Restoration was performed for 54, 64, 45. Extractions were done i.r.t. 74, 75, 84, 85 followed by removable space maintainer (Figure 5-6).

**Figure 5: Post extraction Follow-up**

**Figure 6: Post operative view RPD i.r.t. 74, 75, 84**

## DISCUSSION

Children with nephrotic syndrome are often on immunosuppressive and are more susceptible for any infections. Any invasive procedure may create bacteraemia as the microorganisms can enter into the bloodstream through dental caries, oral ulcers, plaque, and calculus, which can lead to morbidity and potential mortality in patients who are with renal failure or in children who are on dialysis [5]. Therefore, consultation from the nephrologists and prophylactic antibiotics administration is required for any aggresive dental treatment in patients suffering from kidney diseases.

In children, dental treatment is often a source of anxiety and fear so dentists should prevent any excessive stress which could elevate the systolic blood pressure. Therefore, our treatment was started with Tell show Do in the first visit to reduce the anxiety in the patient. Extraction of tooth was the treatment of choice rather than pulp therapy to prevent any dental sepsis. All the tooth extractions were done under suitable antibiotic coverage and with the consultation of physician-in-charge.[7,8] . These patients are usually treated best under local anaesthesia, as the anaemia and potential electrolyte disturbances would complicate general anaesthesia [6]. Preference is given to amide type anaesthetic because of its re-absorption potential primarily in liver [5]. Also any kind of bleeding tendencies were excluded before administering the nerve block and the haemostatic agents were kept ready, if need could arise. Patient was instructed to continue his routine medications and was recalled on follow-up after a week. However, the patient could not be regular to his appointments due to his underlying medical condition. The complete healed extraction socket was noticed after 15 days. Fluoride therapy was not done in this patient as fluoride retention can take place even in the moderate renal impairment, therefore, prescription of additional fluorides except toothpastes and fluoridated water is contraindicated [5].

## CONCLUSION

In relation to dental treatment, patients with renal failure need special attentions due to the conditions inherent to the disease and its several oral manifestations, in addition to the side effects and characteristics of the treatments they receive. However, the dental treatment can be performed comfortably with the consultation and co-operation of Paediatrician and Nephrologists.

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