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CASE REPORT

The Challenges in Treating Uremic Stomatitis Patient with Chronic Renal Failure Disease

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ABSTRACT

Background: *Uremic stomatitis is a rare oral manifestation of chronic and acute kidney disease. The incidence of uremic stomatitis is low, especially because process disease develops gradually over years and occurs in advanced renal failure. This disease is associated with high levels of blood urea. There are four forms of uremic stomatitis that have been identified, namely ulcerative, erythemopultaceous, hyperkeratotic and hemorrhagic. Usually the lesions were seen on buccal mucosa, dorsal or ventral surface of tongue, gingiva, lips and floor of mouth*. ***Purpose:*** *To discuss the challenges in treating uremic stomatitis patient with poor systemic condition.* ***Case****: A 73 year old male patient was referred from cardiology department to oral medicine department because there were painful lesions on lips, tongue, palate and buccal mucosa. He was a chronic kidney disease patient whose laboratory results showed high urea and creatinine values.* ***Case management:*** *The Patient was given oral hygiene instruction to clean his teeth and tongue with a gauze soaked in NaCl at least three times a day, compressing the lips and rinse with chlorine dioxide based mouthwash (Oxyfresh®, USA) three times a day. The improvement of oral lesions were not significant because the blood urea and creatinine value were still high.* ***Conclusion:*** *Management of uremic stomatitis needs multidisciplinary teamwork in order to achieve the kidney function and other comorbidities improvement as well as oral lesions to improve the quality of life.*

Keywords: *Chronic renal failure, Challenges, Uremic stomatitis*

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INTRODUCTION

Uremic Stomatitis was first mentioned by Lancereaux in 1887 and later described by Barie in 1889 as an unusual complication of uremia. Uremia is the accumulation of waste product from nitrogenous waste product in the blood may be caused either chronic and acute kidney disease. Uremic stomatitis itself is a disease of the oral mucosa that is rarely found, this is mainly because hemodialysis therapy can help to repair kidney function so that along with the improving of kidney function, its manifestations are rarely found in the oral cavity. [1–3]

Chronic kidney disease is a syndrome defined as persistent changes in kidney structure, function, or both and with implications for individual health. Examples of structural abnormalities include cysts, tumors, malformations and atrophy that are visible on imaging. Conversely, renal dysfunction can manifest as hypertension, edema, changes in urine output or quality and delayed growth in children, these changes can usually be recognized by elevated levels of serum creatinine, cystatin C or blood urea nitrogen (BUN). [4–7]

Chronic kidney disease that is not treated promptly will lead to chronic kidney failure. Chronic renal failure is a condition characterized by a gradual reduced function of homeostasis and renal filtration function. Clinically, chronic renal failure is known as uremia, a condition in which the kidneys fail to perform a very important function, causing retention of nitrogen, followed by an increasing urea in the blood, nitrogen and non-protein nitrogen. Chronic renal failure affects a number of tissues and systems and can cause complications in the nervous, cardiovascular, respiratory, endocrine. hematopoietic, gastrointestinal, urological system and craniofacial complexes. [1,8]

Uremic stomatitis is often a clinical finding in the end-stage chronic kidney disease. Four main types of uremic stomatitis have been described, namely erythemopultaceous, ulcerative, hemorrhagic, and hyperkeratotic. Histologically, uremic stomatitis is characterized by a mild infiltration of inflammatory cells in the connective tissue under the epithelium that is hyperplastic and abnormal keratinization. [1,9,10]

In this article we report a case of ulcerative type uremic stomatitis in a patient with chronic kidney disease. The healing of uremic stomatitis lesions were not significant because of the kidney function was not improving.

CASE

A 73 year old male patient was referred to the oral medicine department Hasan Sadikin Hospital from the cardiology department. The patient complained of dry mouth followed by the appearance of a large number of ulcers in the oral cavity after one week of being hospitalized. The ulcers were very painful, making him difficult to chew and swallow food. The patient was treated with furosemide, clopidogrel, coamoxiclav, paracetamol, folic acid, lansoprazol, seretide, captopril and triamcinolone acetonide in orabase.

At first the patient admitted to the hospital, he complained that two weeks before his breath was short, the number of urination was decreased and two days before hospitalized he did not urinate at all. The diagnosed was acute kidney injury on chronic kidney disease (AKI on CKD) with a differential diagnosis of type 2 cardiorenal syndrome. His medical history including hypertension since 15 years ago, coronary artery bypass 7 years ago, and had been coronary stent placement 11 years ago. He did not suffer diabetes mellitus.

CASE MANAGEMENT

Extraoral examination showed that he was very sick and weak, anemic conjunctiva and non icteric sclera. On intraoral examination, there was a painful ulcerated lesion on the upper labial mucosa, shallow with yellowish-white base, firm edges, confluent, 2 cm in size. On the lower labial mucosa, the lesions were ulcerated, multiple, shallow with yellowish-white base,

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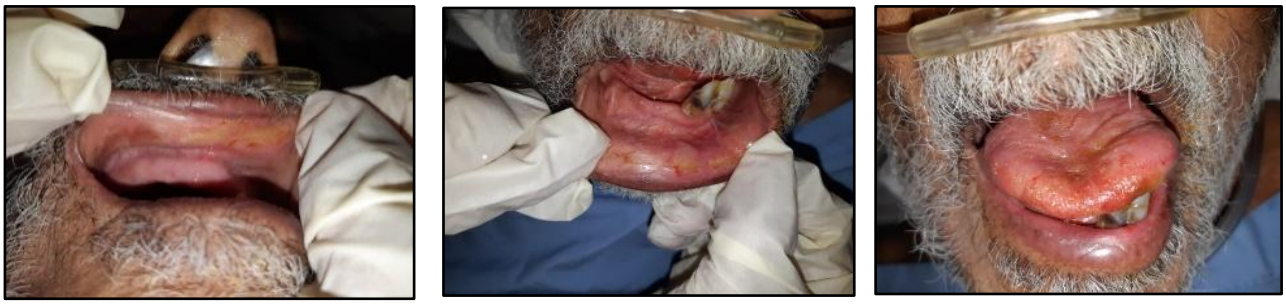
irregular shape, firm edges and slightly elevated, 1 cm in size and painful. On the dorsal tongue, there were painful multiple ulcerated, superficial lesions with yellowish-white base, indurated edges, 0.1-0.8 cm in size. (Fig. 1).

(a) (b) (c)

Figure 1. Ulcerated lesions on upper (a), lower labial mucosa (b) and dorsal of the tongue (c)

Laboratory results showed the value of urea was 142.7 mg / dl and creatinine was 3.12 mg/dl. The diagnosis of uremic stomatitis was made and the differential diagnosis was aphthous like ulcers. The patient was given oral hygiene instructions, including cleaning the oral cavity and tongue using gauze soaked in 0.9% NaCl at least 3 times a day. He was also instructed to compress the lips with gauzesoaked in chlorine dioxide (Oxyfresh®, USA) at least 3 times a day, rinsing with chlorine dioxide mouthwash 3 times a day, stopping triamcinolone acetonide orabase as well as avoiding hard, dry and spicy foods.

After 2 weeks of therapy at our department, there was an improvement of the ulcerations on dorsum of the tongue, upper and lower labial mucosa (Figure 2). However, the improvement was not significant because at that time period, his urea and creatinine values had not returned to normal values (urea 107 mg / dl, creatinine 3.16 mg / dl). During hospitalization, he also underwent hemodialysis 2 times per week.



(a) (b) (c)

Figure 2. After 2 weeks, the lesions at upper (a), lower labial mucosa (b) and dorsum of the tongue (b) were improved

DISCUSSION

Although the prevalence of oral conditions associated with high salivary urea levels in CKD patients is low, these disease can be observed in patients with high elevation of urea levels in blood. Apart from uremic stomatitis, other oral lesions in patients with chronic renal failure including abnormal pigmentation of the lips, uremic halitosis, dysgeusia, xerostomia, gingival hemorrhage, periodontitis, candidiasis, burning sensation and ulceration. The patient in this case report also complained of xerostomia, which usually occurs in 28-59% of patients with end-stage renal disease that occurs due to polyuria, caused by

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the inability of the kidneys to reabsorb sodium. [10–12]

Uremic stomatitis is an uncommon intraoral manifestation, it is usually seen in end-stage renal disease or chronic kidney disease that is undiagnosed or untreated. The etiopathogenesis of uremic stomatitis has not fully understood, however, it may be due to an increase in ammonia compounds. Ammonia is formed by the action of urease bacteria which converts urea in saliva which may affect the oral mucosa. [13,14]

The patient in this case report suffered from acute kidney injury on chronic kidney disease (AKI on CKD) which from several epidemiological and experimental studies it was mentioned that AKI contributed to the progression and rate of deterioration of CKD. AKI in adults and children is strongly associated with an increased risk of developing CKD and the risk of incidence of CKD reflects the severity of AKI. AKI and CKD are interrelated syndromes, on one hand AKI contributes to the rate of deterioration of CKD, on the other hand CKD facilitates the patient's predisposition to the occurrence of AKI, and AKI on CKD has a poor prognosis. There are several changes in CKD, including changes the signalling pathways in epithelial cells, increases the induction of oxidative stress in the mitochondria, changes in the level of autophagy, changes in the inflammatory status of the kidneys and causing vascular dysfunction in blood vessels, All of these can increase the sensitivity or susceptibility of AKI and suppress renal repair in patients with AKI on CKD. [15–17]

The treatment of uremic stomatitis is to maintain the oral hygiene including plaque control and calculus removal to reduce the amount of urease and ammonia in the oral cavity. The patient in this case report was given instructions to clean his oral cavity with NaCl, The use of NaCl was to facilitate haemostasis and optimal healing by helping to maintain the wound area still moisture and removing or absorbing exudate, minimizing pain so that the comfort increased. The patient was also instructed to compress the lips with a mouthwash based on chlorine dioxide as well as gargling with the same medication. This mouthwash is a topical bactericide, its action is to reduce bacteria in the oral cavity by inhibiting ammonia production and preventing the ulcers from secondary contamination, this is the goal of healing the lesions. [10,18–20]

Complete healing of these lesions will only occur if the serum urea values return to normal. It was difficult to achieve in this patient although he had already undergone haemodialysis but the kidney function was difficult to improve, this was because he was suffering from AKI on CKD which lead the kidney function became difficult to work normally.

CONCLUSION

The healing of uremic stomatitis lesions is very dependent on the improvement of renal function, because if the urea value in the patient is still high, it will be difficult to achieve significant improvement of the lesions. Therefore, it is necessary to pay attention to the patient's systemic condition and carryout multidisciplinary treatment to heal the oral lesions and can help to improve the patient's quality of life.

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