Xerostomia – An Unknown Oral Manifestation in AAA Syndrome

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Abstract

Background: The triple A syndrome (AAAS), also termed Allgrove syndrome (AS), is a very rare chromosome recessive disorder that was 1st identified in 1978 by Jeremy Allgrove and colleagues in 2 unrelated siblings. In most cases, there is no associated family history. The syndrome comprises of **A**chalasia, **A**ddisonianism and **A**lacrimia. It has an estimated prevalence of 1 per 1,000,000 individuals. About 200 cases have been reported worldwide as of date, showing a great variability in severity as well as in clinical manifestations. Consistent oral findings could be noticed such as high arched palate, oral pigmentation, fissured or atrophic tongue, and xerostomia

Case report: We report the case of a 25-year-old girl who presented with Triple A Syndrome with all characteristic clinical features.

Conclusion: The aim of this case report is to highlight the dental involvement in Allgrove syndrome. In addition, we aim to emphasize the need for the oral physician to accurately diagnose the condition, manage the oral manifestations, and to collaborate with other dental specialists to provide optimum dental care to these patients.

Keywords*: AAA Syndrome, Allgrove's syndrome, Dental, Oral Manifestation, Xerostomia,*

Introduction

Allgrove's syndrome is also popularly termed as AAA syndrome. This was first described by Jeremy Allgrove and his co-workers in 1978. It was considered as a rare chromosome recessive disorder[1]. Literature review reveals approximately 200 cases of AAA syndrome. Although the exact prevalence is unknown, it is estimated that 1 in 1,000,000 individuals suffer from this condition[2]. "Achalasia", "Adrenal Insufficiency" and "Alacrimia" are the major features of this syndrome[1]. Over-time more features of this syndrome were seen to be caused by dysfunction of autonomic nervous system. Gazarian et al. reported autonomic neuropathy in 4 children and suggested referring to the Allgrove's syndrome as "4A syndrome"[3,1]. Recently, studies have identified a mutation in a candidate gene on chromosome 12q13 in AAA patients[4].

AAA syndrome is normally seen during 1st decade of life with alacrimia and achalasia as the earliest manifestation[1]. Adrenal insufficiency and other related features are usually seen in adulthood. Mutation in the 3A's gene on chromosome 12q13 is known to cause the clinical manifestations of this syndrome. This gene is expressed in large quantities in the gastrointestinal system, renal system, adrenal and pituitary gland, and cerebellum[5]. A tryptophan aspartate repeat protein called ALADIN – which is a product of 3A's gene – is

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widely distributed in a large number of organ systems which explains the extensive systems affected[6].

The orofacial region is also widely affected in AAA syndrome – a long dysmorphic phase, elongated philtrum, thin upper lip, and prominent facial features. Intraorally, patients can present with a high arched palate with or without cleft, malocclusion (predominantly cross-bite)[7]. Tongue in these patients can have various presentations such as fissuring, atrophy, poorly developed papillae and occasionally enlarged. Adrenal insufficiency or addisonianism contributes to hyperpigmentation of the perioral region and oral mucosa[2].

Case

A 25-year-old female patient, complained of pain in the right lower back tooth region for the past 20 days and burning sensation in the mouth past 3 months. Patient also gave history of pain which was gradual in onset, continuous in nature, and mild in intensity, and aggravated on chewing food. Pain was radiating to the head and neck and subsided on its own after one hour. No history of nocturnal and postural changes was reported. Patient also complained of burning sensation (VAS 5) in the past 3 months leading to difficulty in eating food leading to loss of appetite. Difficulty in opening the mouth widely. Patient gave a history of difficulty in swallowing food (Fig 1). No h/o burning while micturition. Patient gives a history of dryness of mouth in the last 3 months. Difficulty in speech for long duration. Weight loss from the past 1 year. On asking about the medical history the patient informed she was diagnosed with case of Allgrove's disease at age of 3 yr. On which on asking, patient informed about sudden pigmentation of skin, recurrent respiratory infection, and absence of tears in childhood for which she was advised with artificial tears. Patient's mother informed the delivery was normal. Patient was informed she attained menarche at 14yr of age and had an irregular menstrual cycle. Also gives the history of joint pain from past few years. Patient parents were healthy with no history of similar condition in both maternal and paternal families. Parent's marriage was 2nd degree of consanguinity. Patients may have 2 sibling, and both are healthy. Patient is on Tab Wysolone 5mg (1-0-1/2), Tab Floricot 0.1mg (0-0-1), Tab Calspect 0-1-0, Tab Tayo 60k (one tablet in month). Patients brush once daily and consume a mixed diet with no deleterious habits. On general physical examination, patient walked in unassisted, well- oriented to time, place, and person. Appeared comfortable, Built: ectomorphic, Height: 4'9", Weight: 30 kg, Temperature: afebrile, Vital signs-Pulse: 94 beats/ min, B.P: 140/ 100 mm Hg, Respiratory rate: 24 cycles/ min. Pallor, Icterus, Clubbing, Cyanosis, Lymphadenopathy, Edema were absent. Examination revealed wasting of the thenar and hypothenar muscle (Fig 2). Facial appearance revealed dysmorphic facial features characterized by prominent ears, bulging eyes, and dysarthria with nasal speech (Fig 3). On extra oral examination, Lymph nodes: non-tender, non-palpable. TMJ examination: Bilaterally symmetrical, well- coordinated movements were noted with normal mouth opening. No clicking was noted. Mouth opening-30mm. On intra-oral examination of soft tissue, there was evidence of whitish yellow scrapable plaque on the dorsal and right lateral border of the tongue with multiple deep grooves measuring 1-2cm were seen on the anterior 2/3rd surface of the dorsal surface of the tongue (Fig 4). Tongue appeared erythematous, shrunken with dryness in the oral cavity. Moreover, evidence of crackling in the corner of the mouth bilaterally which were erythematous in appearance and tender on palpation (Fig 5). On salivary gland examination, there was reduced salivary flow without any glandular swelling. On hard tissue examination, Generalized demineralization of the tooth (Fig 6). Dental caries in relation to 11, 12, 16, 17, 31, 34, 35, 36, 37, 41, and 47. Tender on percussion 47, Calculus ++, Stains +. For investigation, the orthopantomogram (Fig 7) and cytological smear was taken from the dorsal and lateral aspect of tongue. Taking all intraoral findings and investigations in consideration, the provisional diagnosis of Oral candidiasis in relation to the lateral border of the tongue, Angular Cheilitis bilaterally, Xerostomia, Apical periodontitis in relation to 47, Dental caries in relation to 11, 12, 16, 17, 31, 34, 35, 36, 37 and 41.

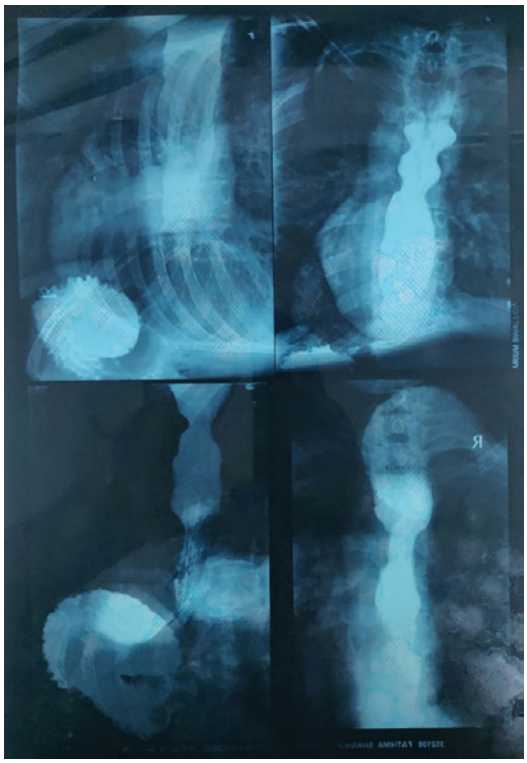

Figure 1: Oesophagography with Barium Swallow diagnostic of achalasia cardia

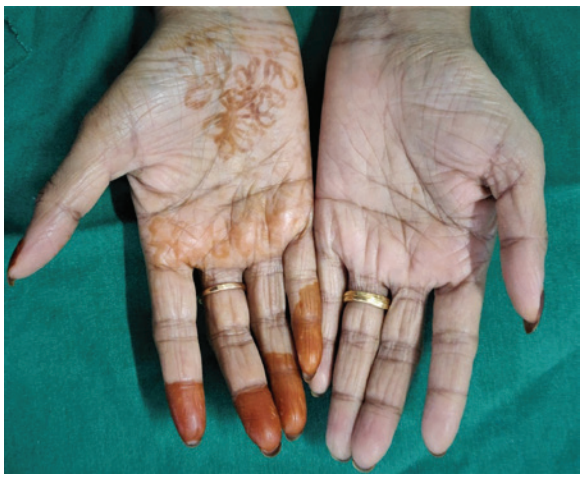

Figure 2: Wasting of Thenar and Hypothenar Muscle

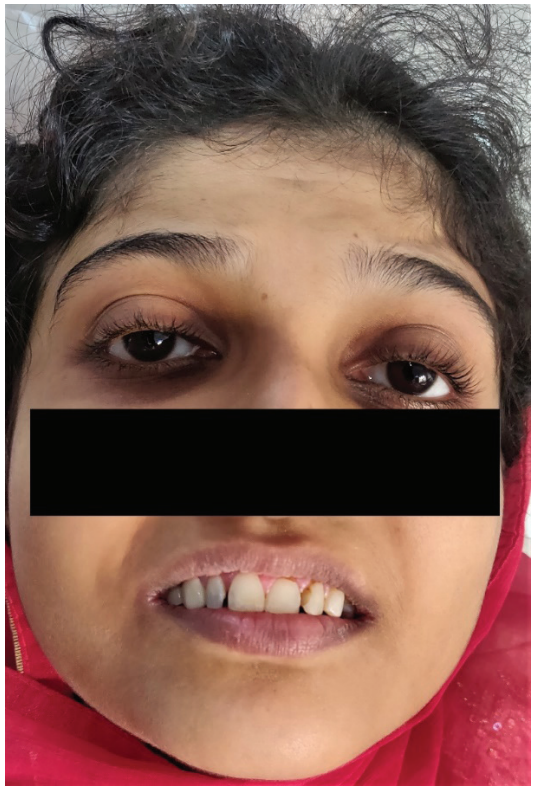

Figure 3: Dysmorphic Facial Features Characterised by Hypertelorism, Prominent Ears, Prognathism

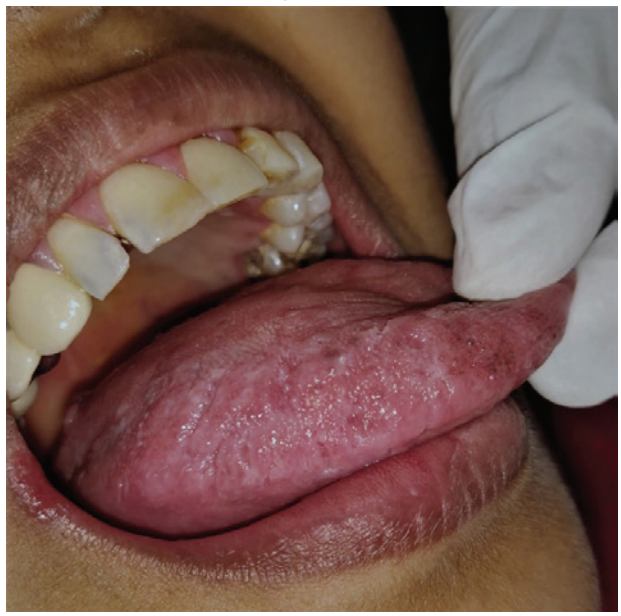

Figure 4: Dry and Fissured Tongue with scrapable white candida lesion on dorsal and lateral aspect

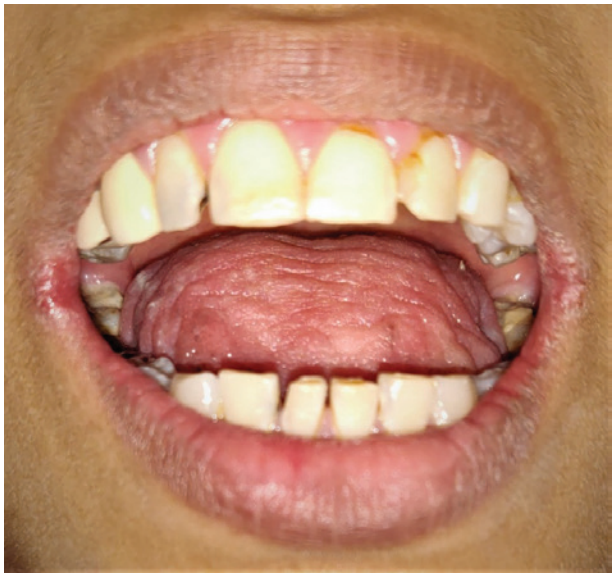

Figure 5: Angular cheilitis

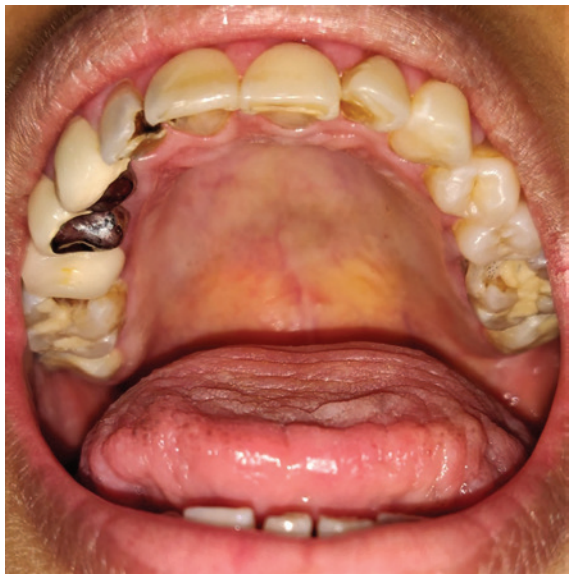

Figure 6: Intra oral examination showing multiple carious tooth and erosion on palatal aspect of upper anterior

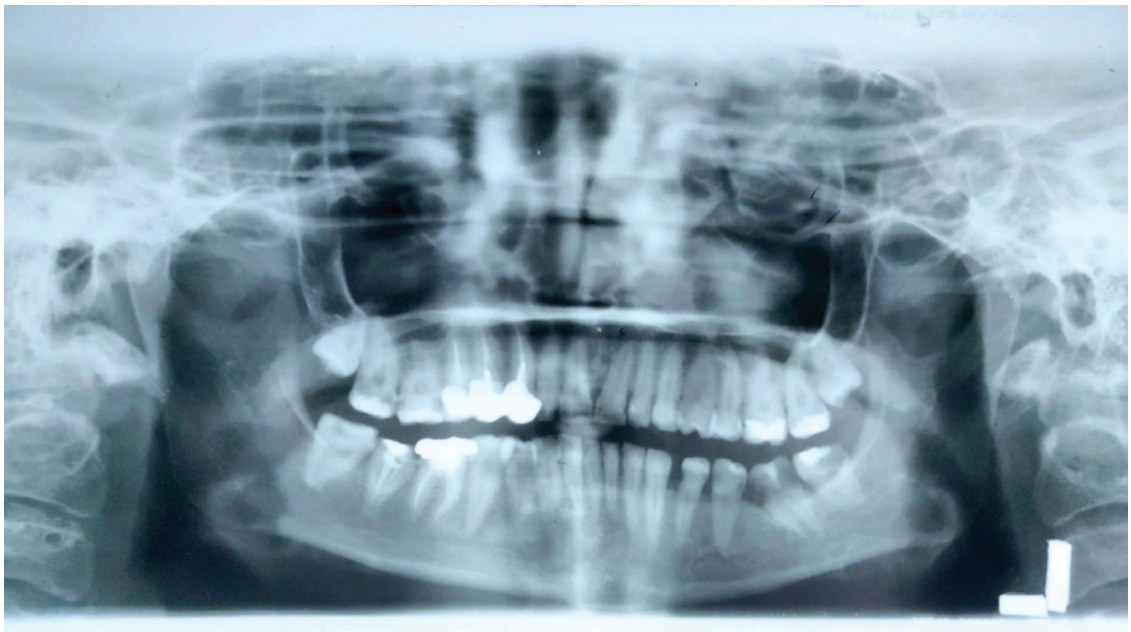

Figure 7: Orthopantomogram showing multiple carious and restored teeth

Discussion

Our patient presented with the characteristic features of the original 3A's of Allgrove's syndrome mainly (Achalasia, adrenal insufficiency, and alacrimia). She also had very pertinent dysmorphic facial features as discussed in the literature such as malar hypoplasia and mandible prognathism[8]. Previous reports by other authors describe the presence of carious lesions, premature exfoliation of teeth, periodontitis and xerostomia[9]. Studies have shown that salivary gland hypofunction (resulting in xerostomia) can influence the oral microflora thereby increasing the chances of developing opportunistic infection specially candidiasis. Xerostomia further enhances the patient's caries

developing risk[10].

Xerostomia represents the cardinal symptom in multiple secretory dysfunctions. There have been reports of an association between xerostomia and angular cheilitis. We believe xerostomia should be considered as one of the cardinal features of AAA syndrome as hyposalivation results in all other oral manifestations such as increased incidence of carious lesions, oral candidiasis and angular cheilitis. These oral findings may help in early diagnosis.

Apart from systemic management of patient, it is imperative that oral changes or oral condition should be managed to improve the quality of life of patients. Patient was prescribed with topical application of candid mouth paint thrice daily on the dorsal and lateral aspect of the tongue for 2 weeks and for xerostomia Limcee was prescribed to keep sublingually and the patient was advised to take frequent sips of water and increase vitamin C in diet. Taking the patients complaint in consideration, patient was referred to the department of endodontics for restoration followed by the department of periodontics for oral prophylaxis. These patients should be followed up periodically and provided with adequate dental care.

Conclusion

This case report highlights the importance of recognizing xerostomia as an important clinical finding in Allgrove's syndrome. Considering the majority of the oral complications are related to reduced salivary flow multidisciplinary approach with appropriate and timely dental care will improve the quality of life of the patient.

Ethical Clearance: Taken from ethics committee of Manipal College of Dental Sciences, Mangalore

Conflict of Interest: Nil

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