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RESECTION OF VERRUCOUS HYPERPLASIA AND RECONSTRUCTION WITH SPLIT THICKNESS SKIN GRAFT AND BUCCAL FAT PAD- A CASE REPORT

Surgery

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ABSTRACT

Verrucous hyperplasia is a rare exophytic oral mucosal lesion which can transform into verrucous carcinoma, its malignant but clinically similar counterpart in due time.[1] Sometimes a mixed verrucous hyperplasia-squamous cell carcinoma can co-exist. These entities may be differentiated by the invasive character in hyperplastic conditions. So it is important to have an adequate depth while performing an incisional biopsy. We report a 45 year old man who visited department of Oral and maxillofacial surgery, Haldia Institute of Dental Sciences and Research had undergone treatment of such case.

KEYWORDS

Verrucous hyperplasia, Split thickness skin graft, Buccal fat pad.

INTRODUCTION

Verrucous hyperplasia is a premalignant exophytic oral mucosal lesion with a predominantly verrucous or papillary surface; this lesion can eventually transform into verrucous carcinoma, a properly-set up warty version of squamous carcinoma.[2] This was first described by Shear and Pindborg.[3] They explained that verrucous hyperplasia is Exceptionally distinguished from verrucous carcinoma in biopsies taken at the margins of the lesions. In the former, the verrucous processes and majority of hyperplastic epithelium are superficial to adjacent regular epithelium. In the latter, the verrucous processes are superficial, but the huge rete methods expand notably deeper than adjoining epithelium, frequently pulling a margin of adjacent epithelium down with it into the underlying connective tissue.

CASE REPORT

A 45 year old man visited Department of Oral and Maxillofacial Surgery, Haldia Institute of Dental Sciences and Research with a chief complaint of whitish patch on left inner side of cheek region since last 1 year. Patient was a chronic smoker for last 15 years and no relevant medical history was found. The whitish patch was non tender, slow growing lesion which gradually attended its size and shape. Upon inspection and palpation, this whitish patch was non-ulcerated, sessile, extending from left commissural region till the retromolar region in three distinct island each approximately 2*1.5*0.5cm in size. Lymph node involvement was negative clinically. Provisional diagnosis of- 1. Verrucous hyperplasia involving left buccal mucosa, 2. Proliferative verrucous leukoplakia involving left buccal mucosa, 3. Verrucous Carcinoma involving left buccal mucosa was noted. Patient was advised to undergo incisional biopsy and Contrast Enhanced CT scan of oral cavity and neck.

Histopathological study revealed verrucous projections were present above the adjacent normal epithelium with increased thickness in stratum spinosum and broaden rete ridges. Contrast enhanced ct scan report described a focal thickening of left buccal mucosa measuring 22*8mm without involvement of any lymph nodes. So a final diagnosis was made of "Verrucous Hyperplasia involving left buccal mucosa and treatment plan of "Wide local excision of the lesion followed by reconstruction with split thickness skin graft and buccal fat pad" was decided.

Surgical Technique-

Patient was intubated nasoendotracheally. After proper disinfection with povidione-iodine solution both intraorally and extraorally and drapping done meticulously, local anesthesia (2% Lignocaine and 1:80,000 adrenaline) infiltrated around the lesion to achieve blood less field and also for post-operative pain management. Marking of the margin was done with marking ink. Wide local excision is performed taking a margin of 1cm from all side as indicated in literatures due to its high recurrence rate. Haemostasis was achieved thoroughly with bipolar cautery. Split thickness skin graft was harvested from contralateral inner aspect of thigh with humby's knife, fenestrated with no. 11 B.P blade for making a passage for transudate to escape and lessens the chances of flap failure. Buccal fat pad is harvested from existing defect beneath buccinator muscle. Skin graft was used to reconstruct anterior portion of defect and buccal fat pad on posterior portion. Bolster dressing soaked in antibiotic solution was fixed over the surgical site and removed after 7 days. Suturing was done with 3-0 vicryl. Post-operative medications were advised and patient was discharged after 3 days. Post-operative follow up's were on 7th day, 1st month and 3rd month till now.

DISCUSSION

Verrucous hyperplasia and verrucous carcinoma are indistinguishable clinically, might co-exist and that verrucous carcinoma may additionally broaden from verrucous hyperplasia at a later level. Thus, the prognosis of verrucous hyperplasia has to be made histologically and it is important for the clinician to sample the lesion properly when taking a biopsy. The medical association with leukoplakia is huge, and the proof shows that an untreated leukoplakia may additionally become a verrucous hyperplasia and/or a verrucous carcinoma in time. Proliferative verrucous leukoplakia is clinically a non-homogeneous leukoplakia which often confused with verrucous hyperplasia. Hansen in 1985 suggested six histological stages ranging from normal mucosa, hyperkeratosis, verrucous hyperplasia, verrucous carcinoma, papillary squamous cell carcinoma and less well differentiated squamous cell carcinoma. Malignant potential of PVL is more than other types of leukoplakia. Average age for verrucous hyperplasia is 30-60 years.[4] Previous research has indicated the buccal mucosa to be the maximum common site for verrucous hyperplasia; this can potentially be correlated with usage of chewing tobacco which is commonly positioned on this region of the mouth.[5,6] Shear divided verrucous hyperplasia into two types- 'Sharp variation' and 'Blunt variation'. Wang in contrary divided it into 'Plaque type' and 'Mass type'.

Histopathologically, all variations of verrucous hyperplasia showcase verrucous projections of the hyperplastic epithelium which lie superficially to the adjoining epithelium. However, there are significant similarities between hyperplasia and carcinoma lesions. The latter is described as a warty, papillary or fungating exophytic

lesion with wide and intact intrusions of rete ridges. According to previous research, keratin plugging in the centre of epithelial invaginations is a histological hallmark of verrucous carcinoma; but, Slootweg suggested that the presence of keratin plugging isn't always compulsory for a verrucous carcinoma diagnosis. Although dysplasia is hardly ever seen, mitotic figures are not unusual. The difference between hyperplasia and carcinoma is histological, based totally at the vicinity of the hyperplastic epithelium with regards to the adjoining ordinary epithelium; furthermore, the broadened epithelial ridges lie above the adjacent ordinary epithelium in hyperplasia, while similar rete ridges display an endophytic increase pattern in carcinoma cases.[7] In addition, the verrucous procedures in carcinoma frequently deliver a margin of normal epithelium down with them into the underlying connective tissue.

Chen reported excessive expression of inducible nitric oxide synthase (iNOS) proteins and messenger ribonucleic acid in hyperplastic lesions and concluded that an iNOS-based mechanism may be concerned in the malignant transformation of veruccous hyperplasia.[8,9].Additionally, the better expression of interleukin-1β and glutathione S-transferase pi isoenzymes and the allelic loss at 19 loci on seven chromosome arms may play an essential function inside the malignant transformation of verrucous hyperplasia.[10,11,12] Tumour protein p53, epidermal increase factor receptor and human epidermal growth factor receptor 3 expression can also be used to differentiate verrucous hyperplasia from veruccous carcinoma and squamous cell carcinoma.[13,14] Although Greer located an association among the human papilloma virus and veruccous hyperplasia, regarding malignant transformation but yet to be confirmed.[15]

Treatment modality of verrucous hyperplasia remains surgery alone with wide local excision taking adequate soft tissue margin to avoid recurrences. Literatures on distant metastasis remain insignificant. Reconstruction options are many including split or thickness skin graft, local flaps etc.

In our case, we used both split thickness skin graft for anterior defect and buccal fat pad for posterior defect and both of them showed excellent result in terms of flap viability, colour, texture and acceptance in the recipient site. Among all the reconstructive options, split thickness skin graft harvesting is quite technique friendly to surgeon and also it can be done in a two-team approach so less operating time will happen. The buccal fat pad is a simple, reliable flap for repair of small-to-medium sized oral defects. It has an excellent blood supply and causes minimal donor site morbidity.[16] A combination approach always have an upperhand in reconstructive aspect where one flap is unable to reconstruct whole defect. It minimizes both donor site morbidity and having advantages of two flaps altogether. Very few literatures are available in terms of using this combination technique.

CONCLUSION

Verrucous hyperplasia which is clinically indistinguishable from leukoplakia or verrucous carcinoma needs to be diagnosed carefully having good prognosis and better quality of life. Reconstruction with split thickness skin graft and buccal fat pad are well accepted by oral mucosa and needs more research for further evaluation.

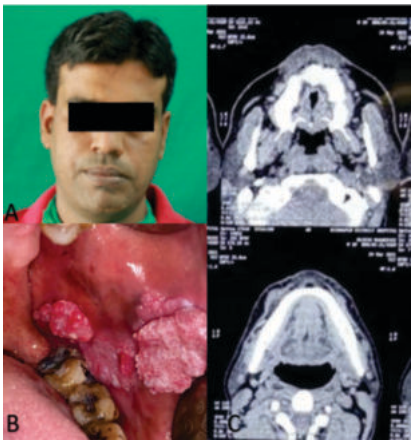

Figure A- Profile photograph, **Figure B-** Intraoral view of the lesion, **Figure C-** Contrast enhanced CT scan (Bony window, axial view) showing thickening of left buccal mucosa

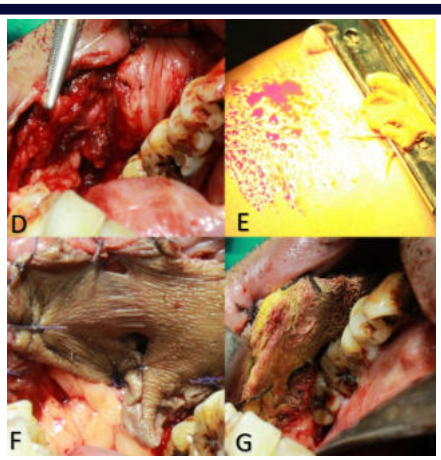

Figure D- Excised bed, **Figure E-** Split thickness skin graft harvest, Figure F- Reconstruction with split thickness skin graft and buccal fat pad, **Figure G**- Bolster dressing applied

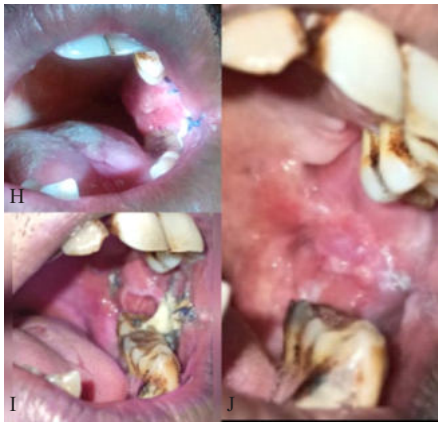

Figure H- 7 days post-operative, **Figure I-** 1 month post-operative, **Figure J**- 3 months post-operative.

Patient is now in good shape and health and no recurrence is seen till 3 months post-operatively.

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