Asian Pac. J. Health Sci., 2017; 4(3):213-219 e-ISSN: 2349-0659, p-ISSN: 2350-0964

Document heading doi: 10.21276/apjhs.2017.4.3.32 Case Report

Key Steps to Optimize Management of Epulis Fissuratum induced by a Total Denture: A Case Report

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Received: 01-08-2017 / Revised: 15-08-2017 / Accepted: 28-08-2017

ABSTRACT

Mucosal lesions related to the wearing of a poorly adapted are frequent. Chronic irritations with sharp or excessive edge lead to hyperplasique reaction. Epulisfissuratum represents 15% of benign tumor of the jaws, is a pseudotumor growth located over the soft tissues of the vestibular sulcus caused by poorly adapted dentures. Treatment indication for these lesions is surgical excision with appropriate prosthetic reconstruction.This article exposes through a clinical case, the interest of a temporary denture followed by a surgical treatment, in healing the massive growth of vestibular oral mucosa in the mandible and maxilla associated with ill-fitting dentures. Prosthetic rehabilitation and function were achieved with the fabrication of new maxillary and mandibular complete dentures.

Keywords: Epulisfissuratum, fibrous tissue, surgical excision, complete denture.

Introduction

Patients with a removable prosthesis may develop various mucosal diseases. Astudy by Jainkittivong et al. In 2010 on 380 patients fitted revealed that 45% showing mucosal lesions related with the wearing of their denture. In this population, 5% of lesions found was hyperplasic reaction namely Epulis**.**Epulis fissuratum also known as Granuloma fissuratum is an oral pathologic condition that appears in the mouth as an overgrowth of fibrous connective tissue. Also referredto as inflammatory fibrous hyperplasia, denture epulis, and denture fibrous hyperplasia.It may become very large and be composed of several layers.

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The size of the lesion can vary from localized hyperplasia less than 1cm in size to larger lesions that involve most of the length of the vestibule, almost the entire length of tissue around a denture.It is more common in women and it can appear in either the mandible or maxilla but is more commonly found on the facial aspect of alveolar ridge [1]. The epithelial cells are usually hyperkeratotic and irregular; hyperplastic rete ridges are often seen. An epulisfissuratum in a patient without dentures can also be diagnostic of Crohn's disease [2]. The aim of this paper is to expose a management of an extensive epulis by illustrating key prosthetic rehabilitation steps focusing on the role of a provisional complete denture to improve the quality of tissue healing and to reduce time of the realization of definitive complete denture.

Case Report

A female patient aged about 52, in good health, complains about tumefactions in relation to its

complete denture. The past dental history of the patient revealed that the patient has been using the same dentures since the time she has been edentulous which was about 11 years without controls or adjustments of the denture. The patient reports that the fibrous tumefactions appeared two years ago with increasing in volume. Examination reveals an ill fitting denture with reduced edge and damaged porous biomaterial with abraded prosthetic teeth which has a mandibular forward shift and a decrease of the vertical dimension of occlusion **(fig. 1a,b).**

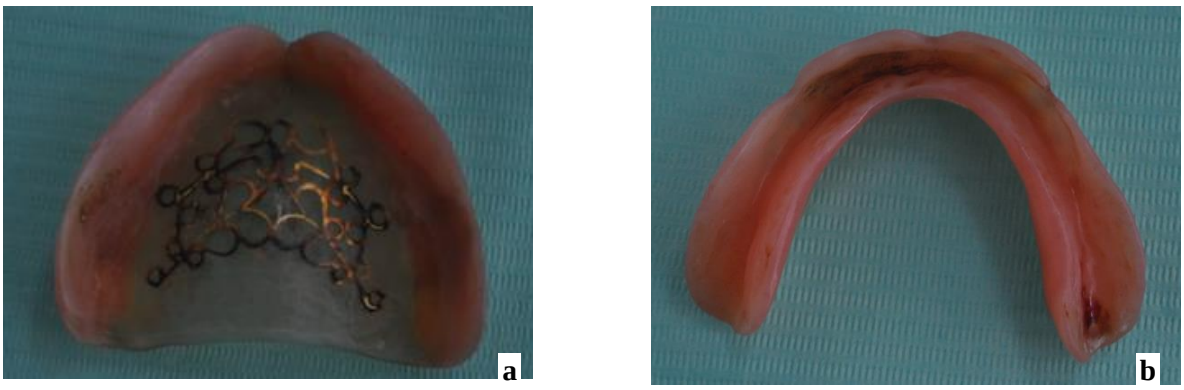

Fig 1a,b:Old dentures

Clinical examination confirms Fibroepithelial polyps filling the alveolar in both maxilla and mandible. The anterior maxillary alveolar ridge has a large horizontal resorption, so the lip support is provided by the mucosal hyperplasia. At the mandible, the crestal bone shows a Class V of Cawood and Howell **(fig. 2 a,b)**.

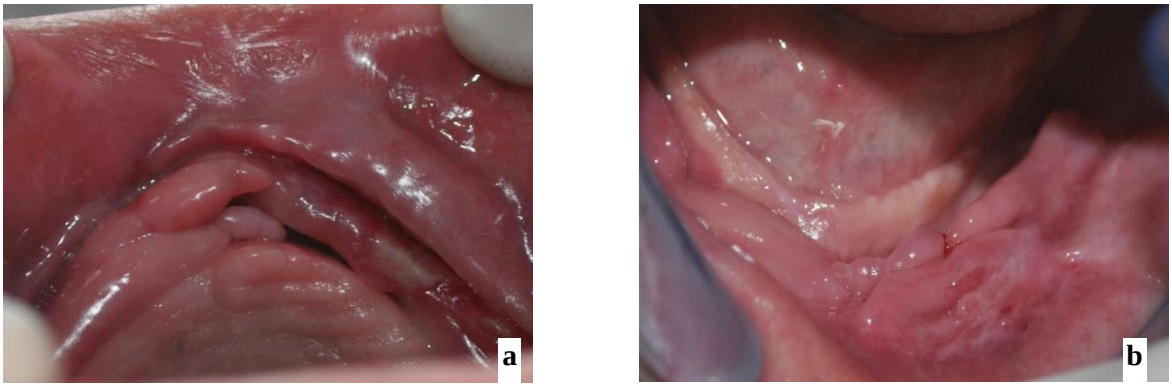

Fig 2a,b:Initial state in the maxilla (a) and mandible (b)

Therapeutic Approach

Prosthetic Approach In Pre Surgery: Realization Of Provisional Denture

To overcome the difficulty of making the first impression of the maxilla, due to the presence of the triple layer of the epulisfissuratum, an individual impression tray was created by a true base softened in warm water introduced in the mouth to well include support surfaces and mucous membranes also to well record the real background of the vestibule and the bone crest.Given the extent of the epulis, the stage of relines was difficult to manage, so once the tray is adjusted, a surfacing impression is taken using zinc oxide eugenol (Impression Past®) **(fig. 3a,b)**.

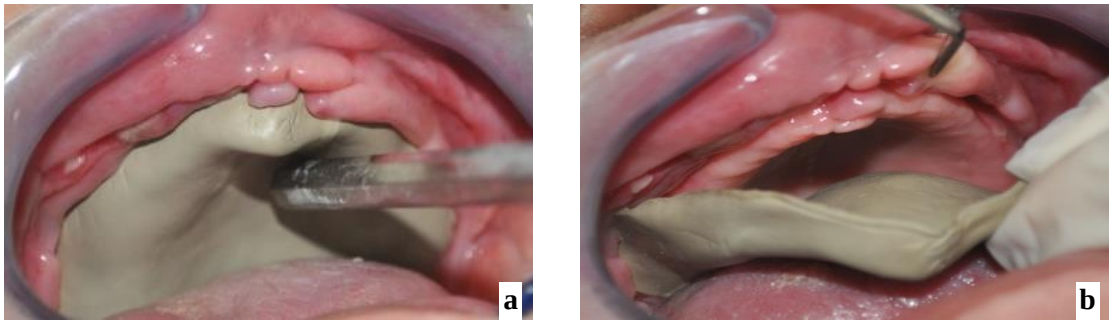

Fig 3a,b:Individual impression tray in extemporaneous

Then the record occlusal plan is conventionally oriented parallel in anterior to the papillary line and posterior to the Camper's plane, allowing the transfer of the maxillary cast in the articulator. In the mandible, primary impression was conducted using the same protocol, but we have not managed to record the retromolar trines. To overcome this deficiency, at the secondary impression, the tray is lengthened directly in the mouth with a self-curing resin relining (pink color) **(fig. 4)**.

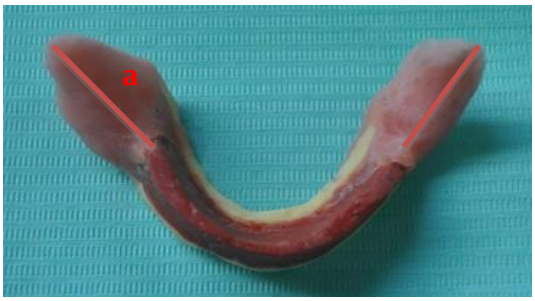

Fig 4: Tray adjusted in the mouth (a: resin addition)

The surfacing impression made is an under pressure occlusal impressionwithout relines also recording theIntermaxillary relationship **(fig. 5a,b)**. Then, the secondary impression serves as a record plan; the demolding of the mandibular cast is carried after transfer to the articulator **(fig. 6)**.

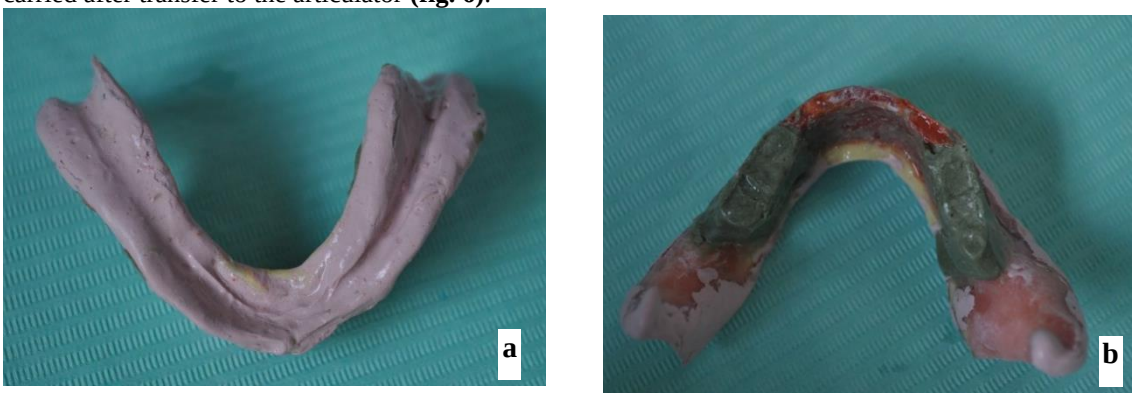

Fig 5a,b:Secondary occlusal impression under pressure (a), occlusion registration (b)

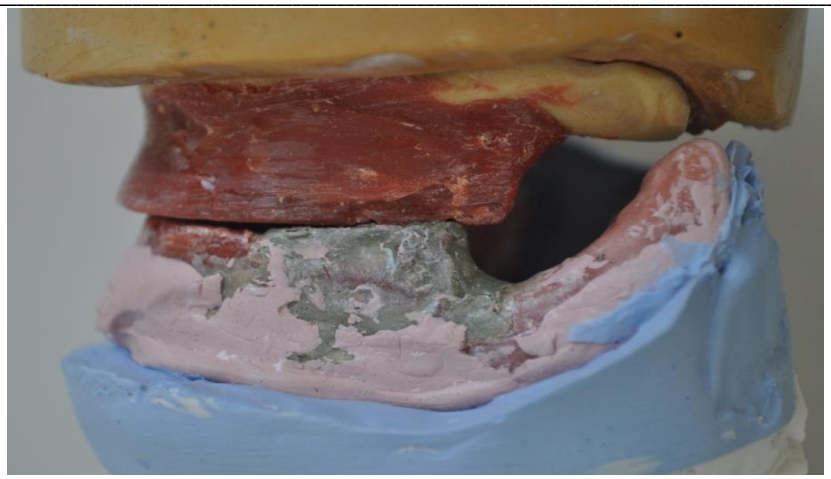

Fig 6:Intermaxillary record: transfer to articulator before demolding of the mandibular impression

At aesthetic and functional fitting stage, the labial support and the anterior occlusal plane relative to the upper lip are approximate due to the presence of fibrous hyperplasia. Then the temporary prosthesis is polymerized. The mandibular prosthesis has posterior bite planes to jointly lead the preparation of tissular conditions and neuro-musculo-articular.

Surgical Phase

The treatment is performed with conventional surgery excision. The preservation of sulcus depth after resection of epulis is conducted at two levels:

- Suturing of the wound margins with periosteum that hasn't been reflected, which remains exposed, avoiding a decrease in the depth of the mucobuccal fold and healing is done by secondary intention: performing a vestibuloplasty with vestibular deepening without union of surgical borders **(fig. 7 a, b, c) [3]**.

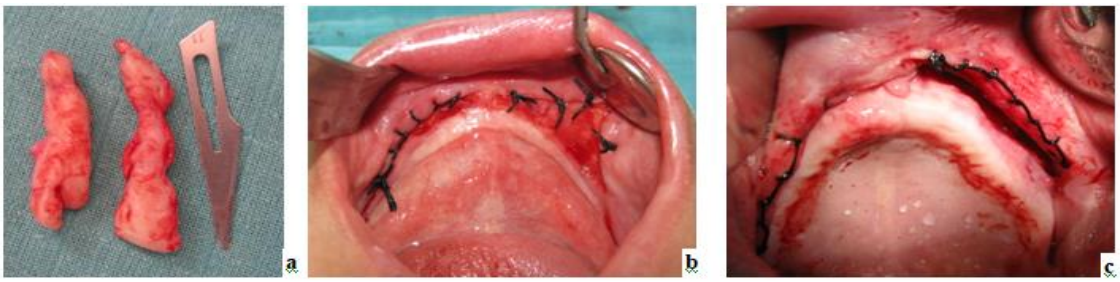

Fig 7a,b,c: resection of fibrous tissue (a) sutures preserving the depth of the buccal side in maxilla (b) and mandible (c)

- Insertion of the temporary prosthesis immediately after the end of operation over the surgical bed. The internal surface of the denture is lined with tissue conditioner (Fitt of Kerr®), which protects the periosteum, guide the healing and retaining the depth of mucosa of the newly created sulcus **(fig 8)**.

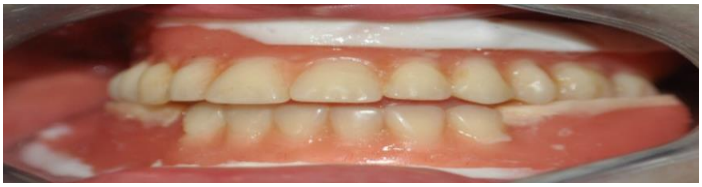

Fig 8: Temporary prostheses rebased by FITT of Kerr® with bites plans

The fibrous tissue resected was sent for anatomopathological analysis, which confirms the benign nature of the hyperplastic tumor and its classification: epulisfissuratum.

Prosthetic Approach In Post Surgery: Realization Of Complete Dentures

After healing, once we see that the fibromucosa of the supporting surface has a physiological aspect **(fig. 9)**, the maxillary secondary impression is achieved conventionally (relines and surfacing).

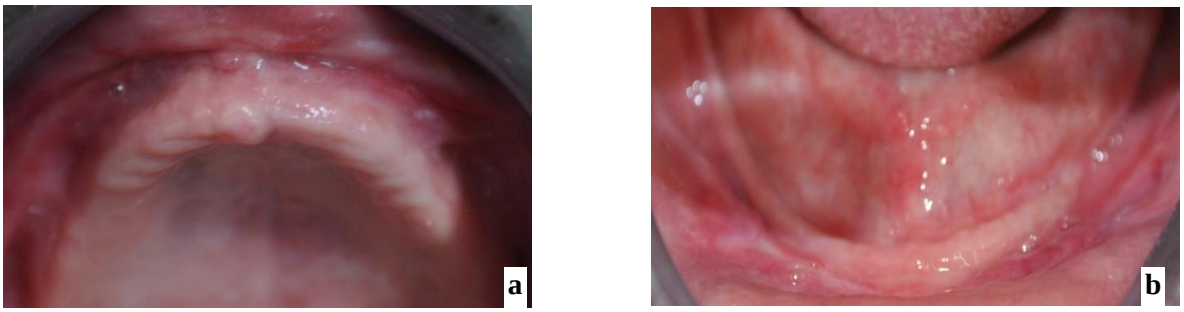

Fig 9a,b: Evolution after 2 months

While in the mandible, the temporary prosthesis will serve to realize secondary impression under occlusal pressure and record the intermaxillary relationship. The properties of elasticity, viscosity and low flow presented by the FITT of Kerr® allow the execution of the supplementary ambulatory impression, and the intrados of the provisional denture is empty, while preserving the FITT of Kerr® at the edges, which represents a functional relines, the surfacing is carried out using light elastomer (Permlastic light) under control of the occlusion **(fig. 10 a , b)**.

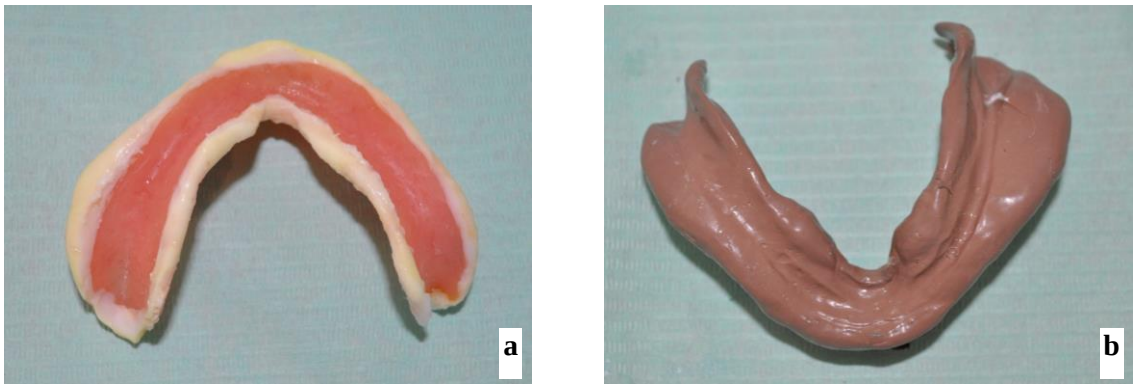

Fig 10a,b: Functional relines (a), surfacing impression (b)

This type of physiological impression research compression of the supporting tissues with light material, balance pressure across the bearing surface and takes into consideration different functional components **(fig. 11)**. The Control of occlusion involves application of a biting force on the impression tray by the patient himself. This technique is particularly indicated to the mandible, becausewe can use a fixed reference: the maxillary.The occlusal control is only possible when using a material carrier adjusted in occlusion;in this case we use the patient's temporary denture, which provides more occlusal precision [4].

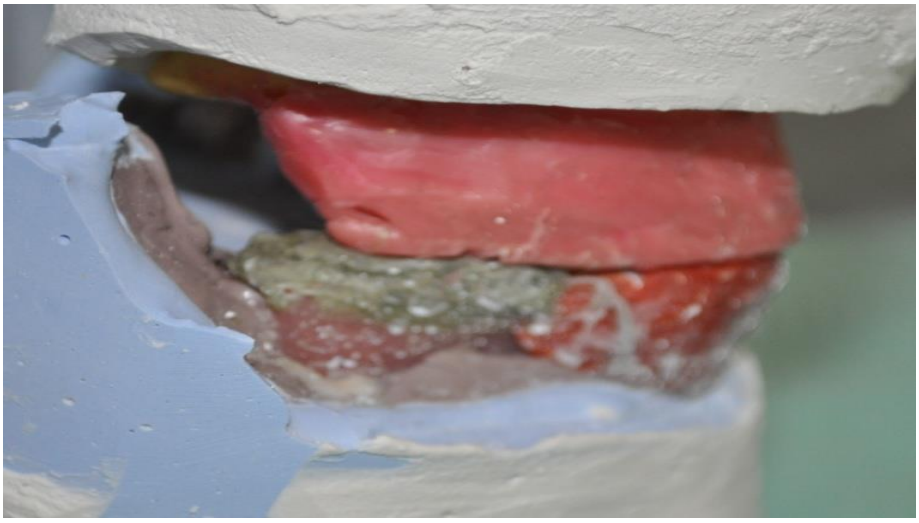

Fig 11: Imaxillary records : Mounting the mandibular cast on the articulator beforedemolding.

The making of the final denture follows the conventional sequences:proper occlusion plan, determination of the correct DVO using the temporary prostheses, occlusal equilibration, and fitting.The new denture show a clear improvement in the retention and prosthetic stability through the quality of the edges which are more rounded and better suited to the vestibule **(fig.12)**.

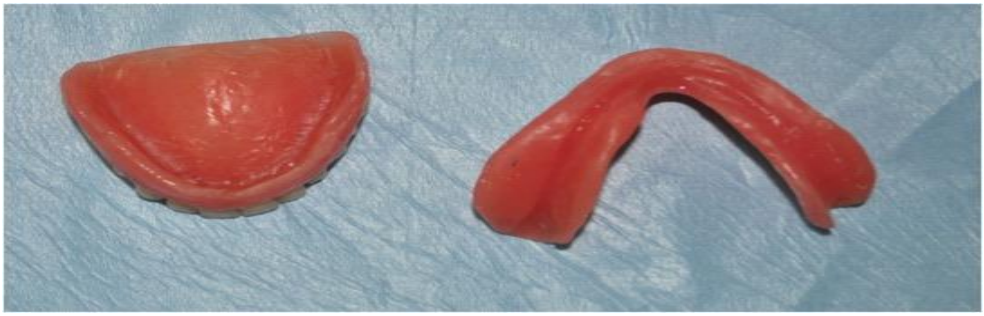

Fig12:New adequately fitting dentures

Discussion

A surgical-prosthetic treatment plan was proposed to the patient. The goal is to:

1. Overcome the difficulty of taking primary and secondary impression to achieve a temporary denture which ensure healing and obtaining an extension of side support surfaces, by jointlycarrying out tissue conditions and neuro-musculo-articular by bite plane in lateral sectors. The properties of the tissue conditioner used ensure a harmonious distribution of occlusal loads; improve the stability and retention of dentures by

maximum exploitation of support surfaces: Enlargement of the biofunctional space [5].

2. Preventing decrease in the vestibule depth after complete surgical excision of fibrous hyperplasia tissues through healing by secondary intention (the flap is sutured with the periosteum that is protected by the temporary denture). There are other treatment means: the carbon dioxide laser and cryotherapy (2 to 3 application by 15 days).A comparative study was conducted on 12 patients with acceptably symmetrical epulisfissuratum in the anterior parts of the jaws. Half of this hyperplastic tissue in each patient was treated with CO_2 laser and the other half was resected with the surgical scalpel and sutured continuously. The results show that the removal of epulisfissuratum with CO_2 laser offer a better wound healing and less decrease in the vestibular depth [6].
3. Performing secondary impression under occlusal pressure that requires the patient participation, by guiding him in his functional movements.The occlusal control offers various advantages:
    - Exact repositioning of the impression tray in the mouth
    - Balance of pressures in the temporo mandibular joint
    - Registration of the supporting surface in the functional position
    - Gain of time.

Most of the patients are not aware that dentures should be rectified on a regular basis because of the resorption of the alveolar bone, which is a continuous process, leading to unfitted denture that causes the growth of fibrous hyperplasia. To avoid this lesion, the prosthodontist should set a schedule of control sessions to entertain regular follow up and adjustments of denture to ensure longevity of a good functioning of the dentures. [7]. The chronic irritation caused by wearing a defective or poorly adapted denture is a contributing factor to the development of oral cancers, promoting dysplasia and carcinogenesis [1].

Conclusion

The complete removable denture plays an important role in improving the quality of life of edentulous patient, but the wearing of poorly adapted prosthesis cause mucosal lesions.These can be avoided by establishing hygiene means and periodic checks of dentures to prevent bone resorption and fibrous hyperplasia due to chronic irritation by too sharp or excessive edges [8]. Oral mucosa demonstrates a significantly low tolerance level to injury and irritation compared to human skin. Surgical excision is the definitive treatment of epulisfissuratum, always with appropriate prosthetic reconstruction. The treatment is usually performed with conventional surgery excision. The denture covered with tissue conditioner is adapted and reinserted over the surgical bed, permitting the maintenance of vestibular sulcus to prevent a loss of sulcus depth.

Source of Support: Nil
Conflict of Interest: Nil

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