Inflammatory papillary hyperplasia: review of literature and case report involving a 10-year-old child

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Inflammatory papillary hyperplasia is a benign lesion of the palate seen most often in patients with a history of ill-fitting dentures or poor oral hygiene. The specific cause is unknown. Inflammatory papillary hyperplasia can occur at any age. However, it is most often seen in patients in the third to fifth decades. It occurs more frequently in males and whites. The best treatment is surgical removal. The prognosis is excellent, once the lesion is removed. The patient presented in this case report is a 10-year-old black girl without a history of a dental prosthesis. It is conjectured that poor oral hygiene and a habit of mouth breathing contributed to the occurrence of inflammatory papillary hyperplasia in this patient. The lesion was surgically removed, and the patient was followed up for a period of 18 months without recurrence of the lesion. (Quintessence Int 1990;21:133–138.)

Introduction

Inflammatory papillary hyperplasia (IPH) is a benign lesion of the oral mucosa — the result of epithelial proliferation. The lesion is primarily found in the maxilla, and usually occurs in patients with dentures. It has also been found in dentulous patients with no history of a dental prosthesis. Although IPH has been associated with ill-fitting dentures and poor oral hygiene, the specific cause is unknown.

Inflammatory papillary hyperplasia is known to occur in various age groups and nationalities. However, it is most often seen in the third, fourth and fifth decades of life in the white population. Clinically IPH, found primarily on the hard palate, appears as a reddened area with papillary-type projections and varying degrees of inflammation. Moreover, most patients are unaware of the presence of the lesion. It is usually asymptomatic. The depth and extent of the lesion usually become more visible with bright illumination and a blast of air directed at the site. The air blast causes the lesion to have "a wheat field in a breeze" swaying motion.

Evidence on the premalignancy of IPH is inconclusive. Varying opinions exist regarding this lesion. Tissue irritation, in the denture-wearing patient, is thought to play a role as a predisposing factor in carcinoma. Clinical suspicions of IPH should be confirmed with histological examination of the biopsied specimen. Inflammatory papillary hyperplasia can simulate more serious conditions, particularly in the dentulous patients.

Classification of the lesion is based on clinical appearance of the surface morphology. Nodular, papillary, and mossy, or velvetlike, morphology has been observed. Often, the lesion has a combination of the morphologic types previously mentioned. The most difficult to observe in the early stages is the lesion with the mossy, or velvet-type, morphology.

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Treatment of IPH is controversial. Denture removal, soft tissue curettage and new denture fabrication, surgical removal, cryotherapy, and electrocauterization have all been suggested as treatment modalities.
Case report

An 8-year, 9-month-old black girl came to the Howard University, College of Dentistry, Department of Pediatric Dentistry with the chief complaint of needing “fillings” in her teeth. Other than a history of chicken pox at age 7 and allergies, for which the patient received allergy injections prophylactically once every 3 weeks, the past medical history was unremarkable. The patient was also in a special class at a local elementary school for a learning disability. The family history included diabetes in the paternal grandfather and hypertension in the paternal and maternal grandmothers.

The clinical examination revealed a mild caries rate, generalized mild gingivitis, and a malocclusion that consisted of a unilateral posterior crossbite, a slight open bite, and an overjet of approximately 6 mm. The patient had mouth breathing and tongue thrusting habits and had fair-to-poor oral hygiene, with visible green staining on several teeth.

Also noted was mild hyperplasia of the palatal mucosa, which was presumed to be associated with the poor oral hygiene condition. The treatment plan, prophylaxis, and fluoride application were completed, and the patient was given an appointment to return for restorative treatment. During the next two appointments, the teeth were restored, sealants were placed, and impressions were taken for study casts. Home care instructions were given and stressed at each appointment.

Eighteen months later, the patient returned to the clinic. The mother wanted her child’s teeth “cleaned.” Examination revealed that the palate was inflamed and hyperplastic and the oral hygiene was poor. The depth and extent of hyperplasia were not realized until a blast of air elicited a swaying motion of the area and papillary projections (Fig 1). Subsequent to this, a consultation was sought regarding the lesion. The differential diagnosis for the nontender, nonhemorrhagic lesion included condylomata acuminata, inflammatory papillary hyperplasia, and the “palate of a mouth breather.”

The patient was referred to the Oral and Maxillofacial Surgery Clinic for examination of the area and evaluation of patient management for the incisional biopsy. After a discussion with the parent and patient, the oral surgeon and pediatric dentist agreed the patient could be managed with local anesthesia only.

The clinical examination of the patient revealed a bilateral, palatal papillary-appearing lesion that measured approximately 3.5 cm anteroposteriorly and approximately 1 cm on either side of the palatal midline.

An incisional biopsy was performed, and the specimen was placed in 10% buffered formalin solution and submitted for microscopic evaluation. A histopathologic diagnosis of nonspecific papillary mucositis was made. However, the presence of koilocytes in the prickle cell layer was suggestive of viral etiology (Fig 2). An excisional biopsy of the remaining lesion was recommended.

A transparent acrylic stent with wire clasps was fabricated prior to the planned excisional biopsy of the lesion (Fig 3).

The patient was prepared and draped in the usual manner. Prior to surgery, bilateral anterior palatine injections and a nasopalatine injection were given using Lidocaine 2% with epinephrine 1:100,000. An incision was made through the mucoperiosteum around the entire hyperplastic area to include a 3-mm margin of normal tissue. This was followed by subperiosteal dissection, separating the entire lesion from the palate process. The integrity of the greater palatine artery and nerve was maintained. The specimen (Fig 4) was secured in the usual manner and submitted for histologic examination.

The previously fabricated stent packed with a small amount of Periopac (Coe Laboratories, Inc) was placed to enhance hemostasis. This type stent was easily removed and cleaned at each visit (Fig 5).

The patient was placed on an oral antibiotic regimen (Penicillin VK, 250 mg, one tablet every 6 hours, and Tylenol No. 3, one tablet every 4 hours, as needed, for pain). Home care instructions were given to the parent and patient.

Subsequent to the excisional biopsy, a tissue block and a microslide were sent to the Armed Forces Institute of Pathology for further evaluation, and a diagnosis of inflammatory papillary hyperplasia of the palate was made. Its unusual occurrence in a 10-year-old patient was also noted.

The patient was seen on the fifth postoperative day and was healing well (Fig 6). The stent was cleaned, relined with Coe-Comfort (Coe Laboratories, Inc), and readapted. Three weeks postoperatively, uncomplicated healing had occurred, and the surgical site had completely granulated in with normal appearing mucosa. The patient was then referred to the Department of Pediatric Dentistry. The patient had her dental treatment completed and was followed up regarding the palate for 15 months (Fig 7).
Fig 1a The palate as seen during the examination of the 10-year-old patient.

Fig 2a to 2d Photomicrographs of the palatal lesion (hematoxylin and eosin stain).

Fig 2a Papillary surface projections (P) (magnification x25).

Fig 2b Acanthosis (AC) and basal hyperplasia (BH) (magnification x100).

Fig 2c Koilocytes (arrows) (magnification x400).

Fig 2d Diffuse chronic inflammatory infiltrate (magnification x250).

Fig 1b The palate as a blast of air is directed at it. Note the papillary projections.
Fig 3 Acrylic stent on the working model.

Fig 4 Specimen after excisional biopsy.

Fig 5 Acrylic stent used as a surgical dressing.

Fig 6 Surgical site 1 week postoperatively. Note the formation of granulation tissue at the periphery of the site.

Fig 7 Surgical site 15 months postoperatively.

Fig 8 Patient at rest. Note the position of the mouth and tongue.

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Inflammatory papillary hyperplasia is a benign lesion of the oral mucosa that can simulate more serious conditions, such as carcinoma. The lesion occurs more frequently in the third to fifth decade of life, but it has been known to occur at various ages. Prolonged day and night denture wearing and ill-fitting dentures are thought to be predisposing factors in IPH. Poor oral hygiene in the dentulous patient has also been postulated as a contributing factor. Not all patients with poor oral hygiene develop IPH; a combination of known and unknown factors may play a role in these patients.

Removal of the ill-fitting denture or improvement of the oral hygiene may result in some regression of the lesion. However, surgical removal of the lesion is the most widely accepted treatment modality. Once the lesion is removed, the prognosis is excellent. The lesion rarely reappears if the contributory factors are corrected and good oral hygiene is maintained.

The pediatric patient presented in this case report had no history of appliance therapy with either a metal or acrylic base. The oral hygiene, however, was poor, and the patient was a habitual mouth breather (Fig 8). Clinically, the lesion was asymptomatic, although it covered a considerable amount of the palate and was inflamed. The biopsy confirmed the diagnosis of inflammatory papillary hyperplasia. Oral condyloma acuminata and "the palate of a mouth breather" were indicated as differential diagnoses at the initial histopathologic consultation. Oral condyloma acuminata has been known to occur in sexually abused children. A conversation with both the parent and child could not substantiate the possibility of sexual abuse. Moreover, the photomicrographs obtained from the submitted specimen confirmed the diagnosis of IPH. The diffuse inflammatory infiltrate signifying a chronic process (see Fig 2d), the surface projections showing a papillary-type topography (see Fig 2a), and the presence of acanthosis and basal hyperplasia were in agreement with histopathologic findings of various authors.

This case was unusual. The patient was black, 10 years of age, female, and had no history of a dental prosthesis. Inflammatory papillary hyperplasia is seen more frequently in males and in patients with a history of dentures.

Inflammatory papillary hyperplasia is a lesion most often found in the maxilla on the palate. It is benign, asymptomatic, and exhibits varying degrees of inflammation. It is rare in the pediatric patient and the dentulous patient without previous dental prosthesis therapy. Inflammatory papillary hyperplasia is best treated surgically and has an excellent prognosis.

References
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