CASE REPORT

An Incidental Finding of Enlarged Genial Tubercles in a Case of Oral Carcinoma

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Abstract

The genial tubercles are a group of bony extensions that surround the lingual foramen bilaterally in the midway between the superior and inferior borders of the lingual surface of the mandible. Enlargement of genial tubercle occurs very rarely due to hypertrophy. This article focuses on a rare case showing hypertrophy of the genial tubercles.

Keywords: Genial tubercles, mental spine, hypertrophy, computed tomography.

INTRODUCTION

The symphysis menti is a faint ridge in the median line where the right and left halves of the mandibular bone meet each other. There are four small elevations on the lingual surface of the symphysis menti which is called superior and inferior genial tubercles depending upon their position. Usually genial tubercles occurs as a rudimentary cortical elevation that gives attachment to the geniohyoid muscle from inferior surface and to the genioglossus muscle from superior surface. Very rarely hypertrophied genial tubercles occur as an anatomical variant.1 The genial tubercles are synonymously called as mental spine, genial apophysis, and spinae mentalis. This case report highlights the rare occurrence of genial tubercle hypertrophy which was identified incidentally during the process of investigating a case of oral carcinoma.

CASE REPORT

A 70 years old man reported to the department with history of severe pain in a decayed right lower molar and a painful ulcer in the same region since one month. His past medical history revealed that the patient was hypertensive but did not take the prescribed medication as he could not afford it.

Extraoral examination revealed a dome shaped swelling in right side of the face over the body of the mandible. The right submandibular lymph nodes were palpable, stony hard in consistency and fixed to the underlying tissue.

Intraoral examination revealed an ulceroproliferative lesion in the alveolar mucosa in relation to premolar and molar regions (Fig. 1). The ulceroproliferative lesion appears erythematous and edematous with rolled and keratotic margin. On palpation, the ulceroproliferative lesion was tender and indurated. On bimanual palpation in sublingual region, a tubular bony hard swelling was noticed and it extends from the midline of the lingual surface of the mandible posteriorly in the floor of the mouth. Tubular bony hard swelling was nontender and measures of about 18 mm in length and 7 mm in width.

Orthopantomograph (Fig. 2) revealed a radiolucent lesion with irregular bony margins in the right body of the mandible. Axial CT of the mandible shows erosion in the right body of the mandible (Fig. 3).

Mandibular occlusal radiograph (Fig. 4) revealed a radiopaque spike like projection with the radiodensity similar to the adjacent mandibular cortical bone that extends from the midline of the lingual surface of the mandible towards posteriorly in the floor of the mouth. This radiopaque projection measures of about 18 mm in length. 3D reconstruction computer tomography confirmed a hyperdense linear projection...
originating from the genial tubercular region. The Hounsfield unit of this projection is similar to the adjacent mandibular cortical bone. Thus 3D reconstruction image confirms the enlarged genial tubercle (Fig. 5).

Photomicrograph (Fig. 6) of histopathology showing evidence of moderately differentiated squamous cell carcinoma. From the clinical examination and investigations this case was diagnosed as moderately differentiated squamous cell carcinoma in right side of the mandible and hypertrophy of genial tubercle.

DISCUSSION
Thomson, in 1915, examined 1,670 mandibles from anthropoids and concluded that the genial tubercles may be absent, replaced by pits, and in some cases well-developed. In 1955 Monheimer has reported an unusual case of exostosis of the genial tubercles in Maori man that measures of about 13 mm wide and 9 mm height. Murphy's study in 1957 reported female prediction in occurrence of hypertrophied genial tubercle. In 1970 Wiesenbaugh et al reported enlargement of the genial tubercles on patients, but the length was not mentioned. Oda LS et al in 1977 concluded that the tubercles seem to diminish with age, especially in complete edentulous individuals. Later in 1992 MacLeod et al also reported enlargement of the genial tubercles on patients. In other mandible specimens, the tubercles measured 10 mm in length. In 2003, Izhar Shohat et al has reported that enlarged genial tubercle acts as a frequent site of fracture in patients wearing a complete mandibular denture.
when the mandible is atrophied and the genial tubercles are hypertrophied. In 2006 Yassutaka Faria Yaedú et al reported that spontaneous fracture of genial tubercle occur in edentulous mandible. Later numerous researchers analyzed the genial tubercles concerning size, site and association with adjacent structure has been reported. In 2007 Hueman et al has proven accuracy of cone beam in determining the location of the genial tubercle. Izabel Rubira et al in 2009 reported that enlarged genial tubercles produced a painful hard swelling on the floor of the mouth in a completely edentulous mandible due to severe resorption of the alveolar Ridge. In our case enlarged genial tubercle measures of about 18 mm in length and 7 mm in width, which from our current knowledge appears to be the longest reported so far in the literature. Figures 4 and 5 shows the image of the mandible showing enlarged genial tubercle.

REFERENCES