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Case Report

A Simple Self-Made Scale to Design Surgical Margin in Tongue Cancer: Technical Note

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Abstract

We report a simple and cheap self-designed scale that is a very effective instrument for partial glossectomy and tumor excision in oral cavity. This scale could be placed on the surface of the mucosa to design the adequate and accurate surgical margin with forceps.

In addition, this scale can be attached on the surface of the mucosa without holding by the forceps. Its effectiveness and safety were identified for glossectomy, tumor excision in our experience.

Keywords: Surgical margin, Self-made scale, Ruler, Tongue cancer, Leukoplakia, Benign tumor

Introduction

In the patients with tongue cancer, adequate and accurate designed surgical margin are very important regarding local recurrence, clinical metastasis, and survival rate [1- 4]. We describe a simple and cheap self-designed scale that is a very effective instrument from our experience for partial glossectomy and tumor excision in oral cavity.

Methods

We cut a 15cm long flexible scale measure, (BONIMED Surgical Skin Marker,[®]MURANAKA MEDICAL INSTRUMENT Co.Ltd.Japan) at 1cm long and bent it to L-shaped at the end, so that we are able to hold white area with forceps(Figure 1,2). Consequently, this scale could be placed on the surface of the tongue mucosa to design the adequate and accurate surgical margin with forceps (Figure 3). It is marked by Mechirurozanirin chloride (Piokutanin), skin marker with holding this (Figure 3). In addition, this scale can be attached on the surface of the mucosa without holding by the forceps (Figure 4).

Figure1: BONIMED Surgical Skin Marker

MURANAKA MEDICAL INSTRUMENT Co.Ltd.Japan

A 15cm long flexible measure

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Figure 2: Flexible scale measure is cut at 1cm long and bent to L-shaped at the end to hold forceps.

Figure 3 : Self-made scale placed on the surface of the tongue mucosa to design surgical margin with forceps.

Figure 4: Self-made scale attached on the surface of the mucosa without holding.

Case

We used this self-made scale in partial glossectomy for an early T2 lesion of cancer of the tongue in a 73-year-old man

who had been diagnosed with squamous cell carcinoma, 25×20mm in diameter, with no lymph node metastases. The TNM classification was T2N0M0. We planned the partial glossectomy with 1cm long surgical margin using intraoral approach. The incision was designed with adequate and accurate designed surgical margin by means of this self-made scale shown in (Figure 3). The tumor was resected with adequate margins of normal mucosa and soft tissue, includes the oral floor and ipsilateral tongue base. This self-made scale was used for partial glossectomy and tumor excision for the patients with tongue cancer includes leukoplakia, benign tumor in the tongue, oral floor and buccal mucosa in more than 50 patients.

Results

It has become one of the standard instruments for glossectomy, tumor excision in all cases in our institution. Its effectiveness and safety were identified in our experience.

Discussion

To date, the various type scales of measurement manner for designed the surgical margin, such as 1. Vernier Callipers 2. Ruler 3. Caliper gauge were used in the facilities [4]. When the distance from the lesion to the oral floor or the ipsilateral posterior tongue base is measured, these scales might be hindered by the lips, teeth and the buccal mucosa. Therefore surgical assistance must hold the lip, buccal mucosa and teeth by the retractor. As a result, it could provide inappropriate surgical margin, leading to cancer recurrence. The self-made scale also enable less surgeons procedure for participant surgeons. In addition, the self-made scale has the potential to be applied in other types of procedures. It is increasingly being used implant surgery, gingivectomy, and orthognathic surgery in our institution.

In conclusion, the use of this self-made scale is simple, easy to use, cost-effective way to design adequate and accurate surgical margin in tongue cancer and other tumors in the oral cavity.

Declarations

We have no conflicts of interest.

We obtained written consent for publication of the photograph.

No ethical approval was required.

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