



ORIGINAL ARTICLE

## Zuckermandl's Tubercle. Location, Shape and Dimensions<sup>☆</sup>

Elisa Gil-Carcedo Sañudo,\* María Eugenia Menéndez Argüelles,  
Luis Ángel Vallejo Valdezate, David Herrero Calvo, Luis María Gil-Carcedo García

Servicio de Otorrinolaringología, Hospital Universitario Río Hortega, Valladolid, Spain

Received 28 February 2012; accepted 3 May 2012

### KEYWORDS

Thyroidectomy;  
Zuckermandl's  
tubercle;  
Shape;  
Location;  
Dimensions

### Abstract

*Introduction and objective:* Although Zuckermandl's tubercle is not known by many head and neck surgeons, it is a fundamental surgical anatomical detail, already described in the nineteenth century. Its detection is of great importance as the reference in the search for the recurrent nerve and superior parathyroid gland.

*Material and method:* We designed a prospective study to analyse the posterolateral border of thyroid lobes, looking for this tubercle. We included 107 thyroidectomies performed by the same surgeon; 88 were total thyroidectomies (82.24%) and 19 hemithyroidectomies (17.75%), with dissection of a total of 195 thyroid lobes. Zuckermandl's tubercle should be sought by displacing the posterolateral margin of the thyroid lobes.

*Results:* It was reliably detected in 155 thyroid lobes (79.48%). The mean tubercle dimensions were 11mm transverse axis and 9mm longitudinal axis. The shape of the Zuckermandl's tubercle was sessile (70.96%) or pedunculated (29.03%). In the 5.80% of cases, the Zuckermandl's tubercle distal end was bifid. We did not find a Zuckermandl's tubercle individualised as an ectopic thyroid (0.00%). Zuckermandl's tubercle was more frequent in the right thyroid lobe ( $P = .06$ ).

*Conclusion:* Zuckermandl's tubercle is recognised by its location, shape and dimensions.

© 2012 Elsevier España, S.L. All rights reserved.

### PALABRAS CLAVE

Tiroidectomía;  
Tubérculo  
Zuckermandl;  
Forma;  
Situación;  
Dimensiones

### Tubérculo de Zuckermandl. Situación, forma y dimensiones

#### Resumen

*Introducción y objetivo:* Aunque no es conocido por buena parte de los cirujanos de cabeza y cuello, el tubérculo de Zuckermandl es un detalle anatómico quirúrgico fundamental, descrito ya en el siglo XIX; su detección tiene gran importancia al servir de referencia en la búsqueda del nervio recurrente y de la glándula paratiroides superior.

*Material y método:* Diseñamos un estudio descriptivo prospectivo para analizar el borde posterolateral de los lóbulos tiroideos buscando esta formación. Incluimos 107 tiroidectomías realizadas por un mismo cirujano, 88 son tiroidectomías totales (82,24%) y

<sup>☆</sup> Please cite this article as: Gil-Carcedo Sañudo E, et al. Tubérculo de Zuckermandl. Situación, forma y dimensiones. Acta Otorrinolaringol Esp. 2012;63:443–9.

\* Corresponding author.

E-mail address: [e.gilcarcedo@gmail.com](mailto:e.gilcarcedo@gmail.com) (E. Gil-Carcedo Sañudo).

19 hemitiroideomías (17,75%); con lo que se disecaron 195 lóbulos tiroideos. El tubérculo de Zuckerkandl debe buscarse luxando hacia fuera el borde posterolateral de los lóbulos tiroideos. **Resultados:** Se detecta con seguridad en 155 lóbulos tiroideos (79,48%). El tubérculo tiene unas dimensiones medias de 11 mm de eje transversal, 9 mm de eje longitudinal. La forma del tubérculo de Zuckerkandl es sesil (70,96%) o pediculada (29,03%). En el 5,80% de los casos el extremo distal del tubérculo de Zuckerkandl es bífido. No encontramos un tubérculo de Zuckerkandl individualizado a modo de tiroides ectópico (0,00%). El tubérculo de Zuckerkandl es más frecuente en el lóbulo tiroideo derecho ( $p=0,06$ ).

**Conclusión:** El tubérculo de Zuckerkandl se reconoce por su situación, forma y dimensiones.

© 2012 Elsevier España, S.L. Todos los derechos reservados.

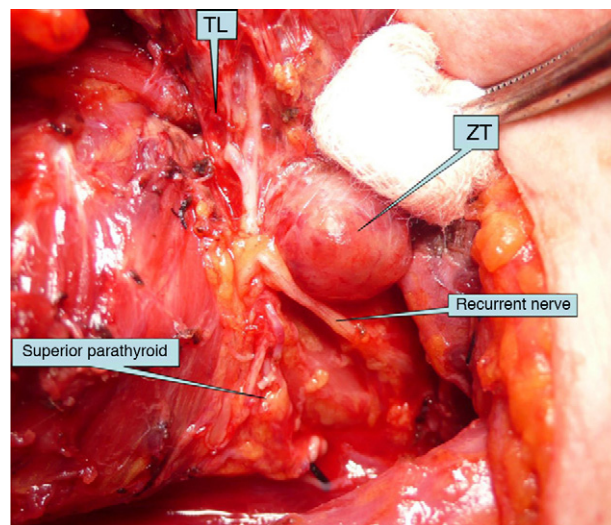
## Introduction

Throughout our surgical experience of hundreds of thyroidectomies we frequently noticed a tuberosity or protuberance located in the posterolateral edge of the thyroid lobes (TL). Frequently, this protuberance was introduced behind the laryngotracheal axis. Moreover, it was surrounded by areolar tissue which was usually laborious to dissect, and the recurrent nerve as well as the inferior thyroid artery and one of its branches were hidden beneath it. When locating this protuberance, the superior parathyroid gland was immediately cranial to it.

Until we read the work of Gauger et al.<sup>1</sup> we were not aware that this structure was known since the late nineteenth century. Its practical significance has spread very slowly and even at present it is still not widely known. It appears in the literature under different names: posterior protuberance (*processus posterior glandulae thyroideae*<sup>2</sup>), Zuckerkandl's tubercle (ZT),<sup>1,3-8</sup> Madelung-Zuckerand tubercle,<sup>9</sup> posterior tubercle,<sup>10</sup> posterior horn,<sup>9</sup> retrotracheal protuberance,<sup>11</sup> retrotracheal lobe and retroesophageal lobe.<sup>12</sup> The work of Mirilas and Skandalakis<sup>4</sup> contains a detailed account of the ZT, from its initial descriptions<sup>2,13</sup> to the present date.

Thus, the ZT is a protuberance emerging from the posterior margin of the TL. It was first described by Madelung in 1879<sup>13</sup> and then by Zuckerkandl in 1902.<sup>2</sup> Its importance in thyroid surgery has been known since the early twentieth century, however it is not known by most surgeons and often goes unnoticed, being mistaken for an irregular form of the posterolateral edge of the TL. As an example, in 2 recent treatises on thyroid surgery, one attached great surgical importance to the ZT,<sup>9</sup> while the other did not even mention it.<sup>14</sup> Today, the importance of embryological, anatomical and surgical technique knowledge regarding the ZT is unquestionable, and solid information about it is crucial when addressing the critical points of thyroid and parathyroid surgery (Fig. 1).<sup>15-24</sup>

We decided to study the morphology of this anatomosurgical detail in a prospective and descriptive manner, in the belief that spreading information about its shape, size and location will help us to recognise it during interventions. Our main goal was to alert head and neck surgeons about the importance of the ZT, a primary anatomical reference for the location of key structures and a point of difficult dissection in TL. Including the ZT within the resection specimen is essential to achieving an adequate total thyroidectomy, since its abandonment in the surgical field leaves a thyroid



**Figure 1** Once dissected, the RTL is displaced medially (arrow). In the photograph, with the aid of a swab, the ZT was carefully separated after removing the areolar tissue surrounding it. This enabled the recurrent nerve to be viewed, below the ZT, as well as the superior parathyroid, cranial to the ZT.

remnant that may result in hypertrophy with tracheoesophageal compression, persistence of hyperthyroidism in Graves' disease, a permanent focus of carcinoma or dispersion of the target for radioiodine.

## Methods

Around 100 thyroidectomies are performed annually at our service, specifically 111 were performed in the year 2011.

Our investigation was designed as a prospective study of ZT in 107 consecutive thyroidectomies performed by the same surgeon on 105 patients, during the period 2009–2011. We operated on 84 females (80.00%) and 21 males (20.00%). The mean age was 54 years, with a range between 15 and 84 years. We conducted 88 total thyroidectomies (82.24%) and 19 hemithyroidectomies (17.75%).

We always performed full extracapsular dissection of each TL. So-called subtotal thyroidectomies are not practiced at our service.

The main disease leading to surgery was: multinodular goitre in 62 cases (59.04%), thyroid cancer in 28 (26.66%) (25 papillary carcinomas, 3 follicular carcinomas), Graves'

Download English Version:

<https://daneshyari.com/en/article/4100919>

Download Persian Version:

<https://daneshyari.com/article/4100919>

[Daneshyari.com](https://daneshyari.com)