

# Granular Cell Tumor of the Esophagus: A Patient Treated by Endoscopic Mucosal Resection with Long Term Follow-Up

Siu-Kee Leung<sup>1\*</sup>, Shing-Hoi Fung<sup>2</sup>, Siu-Chuen Chiu<sup>3</sup>

<sup>1</sup>Department of Surgery, Tuen Mun Hospital, Hong Kong, China; <sup>2</sup>Department of Pathology, Pamela Youde Nethersole Eastern Hospital, Hong Kong, China; <sup>3</sup>Department of Pathology, Tuen Mun Hospital, Hong Kong, China.

Email: \*drleungsk@hotmail.com

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## ABSTRACT

Granular cell tumors (GCTs) of the esophagus are uncommon. We report a case of granular cell tumor of esophagus treated by endoscopic mucosal resection (EMR) with long term follow-up.

**Keywords:** Granular Cell Tumor; Esophagus; Endoscopic Mucosal Resection; Long Term Follow-Up

## 1. Introduction

Granular cell tumors (GCTs) of the esophagus are uncommon. They are usually small and well circumscribed. Evaluation by endoscopic ultrasound (EUS) is useful. If the lesion is limited to the submucosa, endoscopic removal is feasible. We report a case treated by endoscopic mucosal resection (EMR) with long-term follow-up.

## 2. Case Report

A 40-year-old man presented with mild epigastric pain for one year. He was a heavy smoker with chronic obstructive pulmonary disease. There was no symptom of gastroesophageal reflux. He could tolerate full solid diet and there was no weight loss. Physical examination was unremarkable.

Upper gastrointestinal endoscopy revealed a nodular, yellowish-white lesion over mucosa of esophagus, at 35 cm from incisor (**Figure 1**). EUS using a 20 MHz probe was performed. The tumor was 1 cm in maximal diameter. It was hyperechoic compared with muscularis propria, and confined to the submucosa (**Figure 2**). Endoscopic mucosal resection (EMR) was performed, using submucosal injection of normal saline and loop snaring technique.

Histological examination showed sheets of spindled and polygonal cells with small bland regular nuclei and



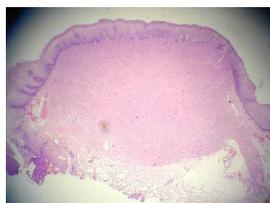
**Figure 1.** Endoscopic view of granular cell tumor of esophagus.



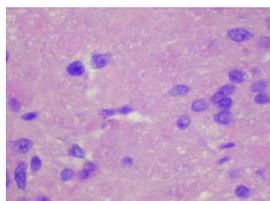
**Figure 2.** Endoscopic ultrasound view.

abundant pale eosinophilic granular cytoplasm. Low power view with Hematoxylin and Eosin (H & E) stain (**Figure 3**) showed a small oval, well-demarcated submucosal nodule, composed of sheets of spindled and polygonal cells. Cytologically (**Figure 4**), they showed small round or slightly irregular nuclei and abundant pale eosinophilic granular cytoplasm. Mitosis was not seen and pleomorphism was minimal. Immunohistochemical stain with S100 showed strong positivity (**Figure 5**).

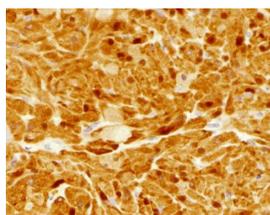
\*Corresponding author.



**Figure 3. Low power, Hematoxylin and Eosin stain (H & E stain).**



**Figure 4. High power view, H & E stain.**



**Figure 5. S100 stain.**

Follow-up endoscopy was performed at 1, 3 months and then yearly for 4 years. The findings were normal. The patient remained asymptomatic for 10 years after EMR.

### 3. Discussion

First described by Abrikossoff in 1931, GCTs of the esophagus are uncommon tumors. They are stromal lesions originating from the Schwann cells of the submucosal neuronal plexus [1-3]. They constitute the second largest group of non-epithelial tumors in the esophagus after leiomyoma [3,4].

The lesion is commonly located in the distal one third of the esophagus. GCTs are generally considered benign, although a few malignant cases have been reported [3]. They may be multiple and synchronous [2].

The history of determining the histogenesis of GCTs is interesting. Initially they were called granular cell myoblastomas. However, histochemical studies show that they are intensely stained with antiserum to S-100 protein, which is a marker of Schwann cells [1].

Endoscopically, GCTs appear as small, yellow mucosa lesions.

In endoscopic ultrasonography, GCTs arise from the submucosal layer. Compared with esophageal leiomyoma, they are more hyperechoic. The use of high frequency ultrasound probes is useful to differentiate the two [4,5].

When EUS shows that there is no evidence of involvement of muscularis propria (MP), endoscopic mucosal resection (EMR) is a feasible treatment modality [5,6].

When the lesion is large or when there is invasion of MP, surgical treatment may become necessary. However, consensus is lacking on the treatment and follow-up of this tumor.

The reported case is a patient with GCT treated by EMR. He remained well for 10 years after the procedure.

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