

# Two Separate Colorectal Granular Cell Tumors: A Case Report

Danica N. Giugliano MD<sup>1</sup>, Danielle Fortuna MD<sup>2</sup>, Scott D. Goldstein MD<sup>1</sup>, Benjamin Phillips MD<sup>1</sup>, Gerald A. Isenberg MD<sup>1</sup>,  
<sup>1</sup>Division of Colorectal Surgery, Department of Surgery and <sup>2</sup>Department of Pathology, Anatomy, and Cell Biology,  
 Thomas Jefferson University, Philadelphia, PA 19107

## Introduction

- Granular cell tumors (GCTs) arise from neural cells<sup>1</sup>. They are benign tumors but 1-2 % can undergo malignant transformation, especially if they are >4cm.
- GCTs can be found at many sites in the body, but are most commonly located in the skin, soft tissue, oral cavity, genital tract, and breast.
- 4-6% of GCTs occur in the gastrointestinal (GI) tract, most commonly in the esophagus, followed by the colon and stomach. Of those that are found in the colon, they are most commonly seen in the proximal colon, appendix, cecum, or rectum.
- GCTs usually present as a solitary lesion, though multifocal lesions have been reported in 4-30.4% of cases<sup>1,2</sup>.

## Case Report

A 38-year-old patient presented with chronic abdominal pain and initially diagnosed with irritable bowel syndrome. Clinical exam was benign.

### Diagnosis:

- Colonoscopy showed ascending colon submucosal nodules. Biopsy was inconclusive.

### Treatment:

- The patient underwent a right hemicolectomy.

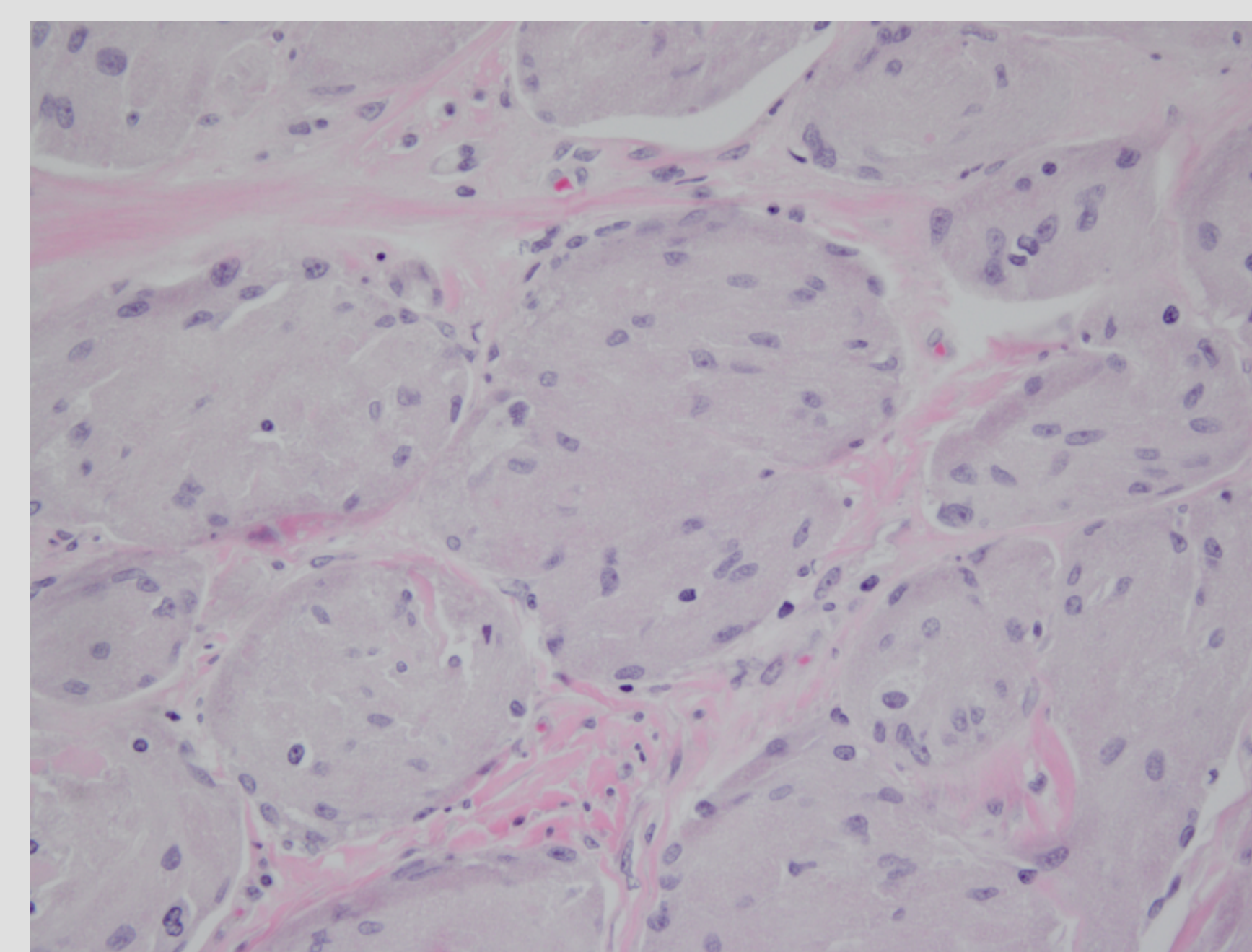
### Surgical Pathology:

- 8 nodules consistent with benign GCTs (0.2-0.8cm in diameter)
  - Cells with sheets of polygonal cells with bland nuclei and abundant granular cytoplasm (Figure 1)
  - Immunohistochemical staining was positive for S-100 (Figure 2) and PAS-D.
- ### Post-operative Course:
- The patient re-presented 23 months later with rectal bleeding and a colonoscopy showing lesions of the sigmoid colon and of the rectum.
  - Pathology from biopsies were consistent with GCTs.
  - He has been observed for the last year and has not had any new symptoms or nodules.

## Discussion

- GI GCTs usually appear on endoscopy as solitary, small submucosal nodular lesions with overlying normal mucosa.
- Histologically, GCTs have large polygonal cells with eosinophilic granules and small, uniform nuclei. They are positive for S-100 protein. GI GCTs are also often positive for CD68, CD56, and SOX-10.
- Multiple lesions are reported in 4-30.4% of patients, and are usually confined to the same organ.
- Endoscopic removal of a GI GCT is the treatment of choice. However, if the lesion is larger than 2 cm, infiltrating the muscularis propria, or is suspicious for malignancy, it should be completely excised by surgery.
- Chemotherapy and radiotherapy have not yet been verified as treatment options for GCTs.

Figure 1. Surgical Pathology : Right Colon (2012)



**Sheets of polygonal cells with bland nuclei and abundant granular cytoplasm**

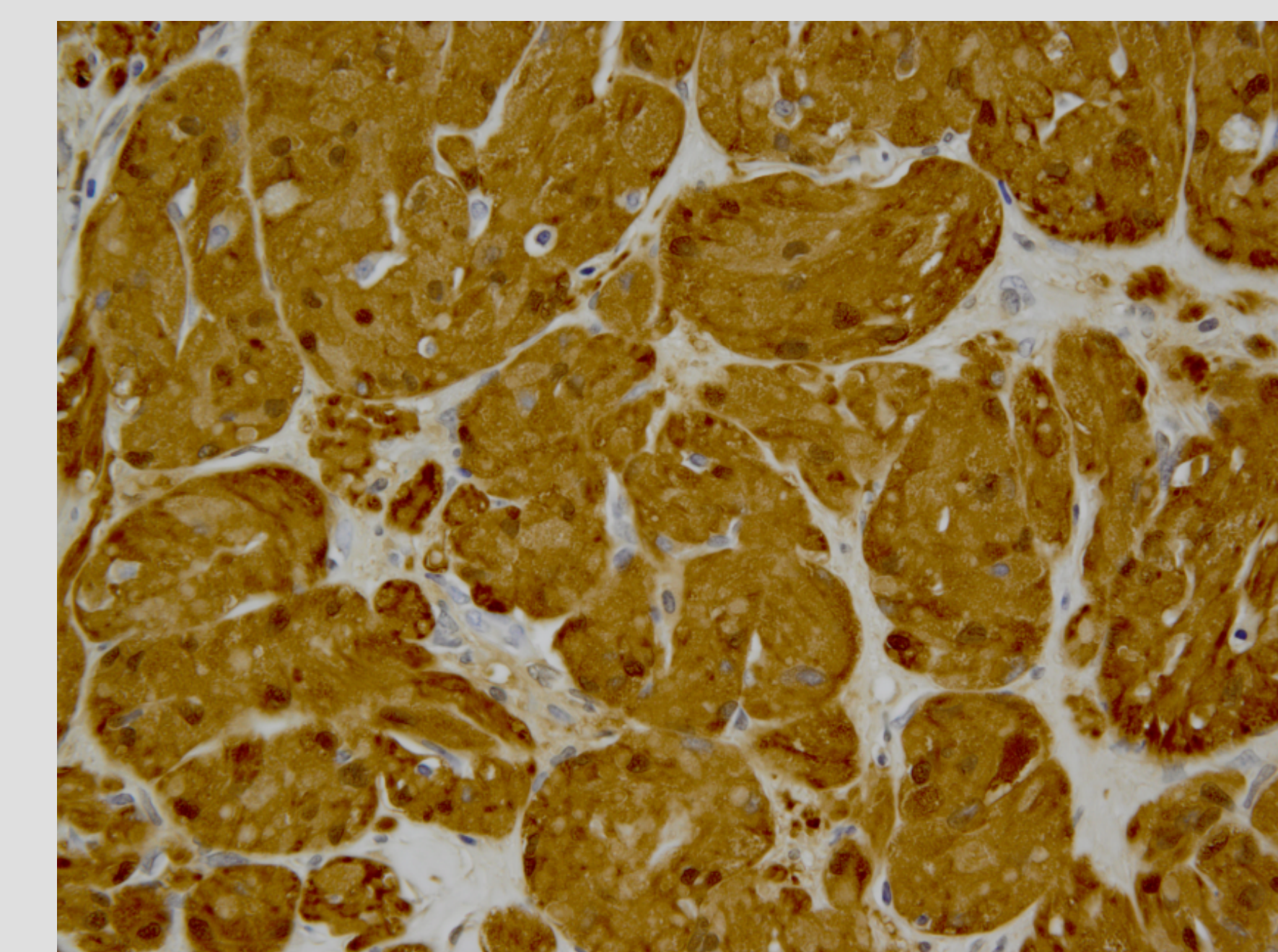
## Conclusions

- Granular cell tumor of the colon is an extremely rare occurrence. Our case shows two separate primary lesions of granular cell tumor of the colon occurring almost two years apart.
- Further research on granular cell tumors is needed to determine patients' risk for tumor recurrence or synchronous lesions.

## References

- [1] Lack EE, Worsham GF, Callihan MD, et al. Granular cell tumor: A clinicopathologic study of 110 patients. *J Surg Oncol.* 1980;13(4):301-316.
- [2] Fried KS, Arden JL, Gouge TH, Balthazar EJ. Multifocal granular cell tumors of the gastrointestinal tract. *Am J Gastroenterol.* 1984;79(10):751-755.

Figure 2. Surgical Pathology: Right Colon (2012)



**Strong, diffusely positive for S100 (indicative of Schwannian origin) and CD68 (due the cells' copious lysosomal content)**