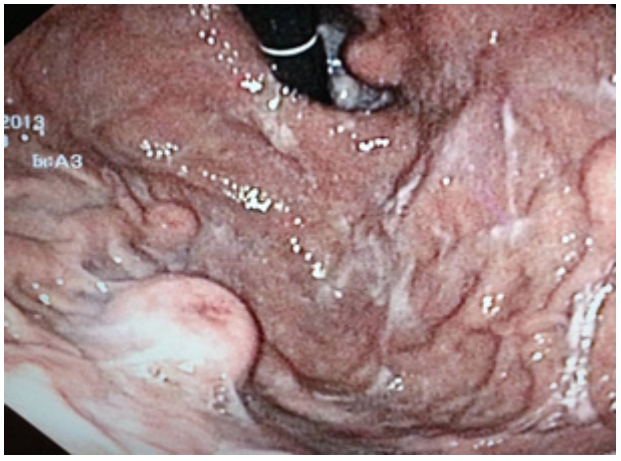
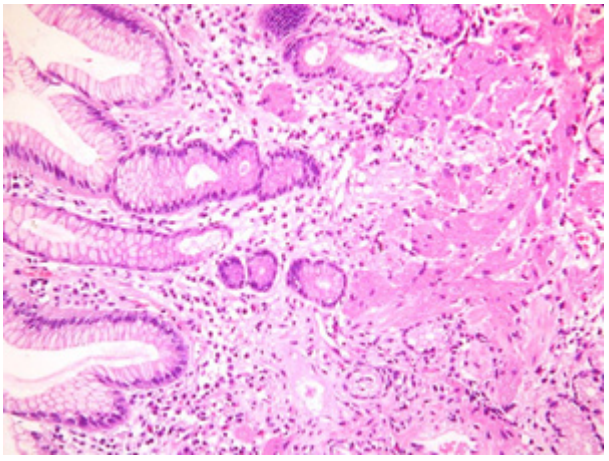
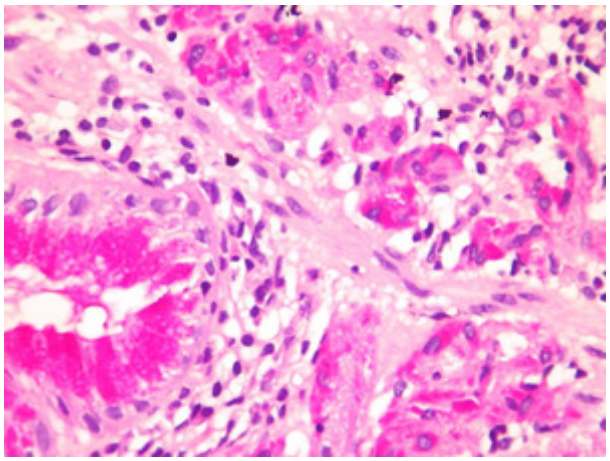
# July 2014

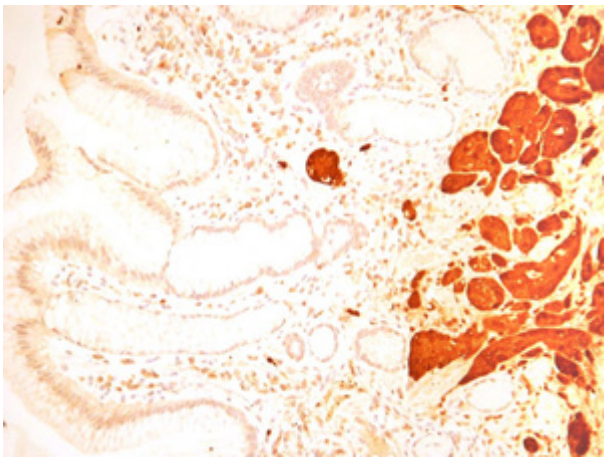
64-year-old male with multiple (submucosal) polyps throughout the gastrointestinal tract.

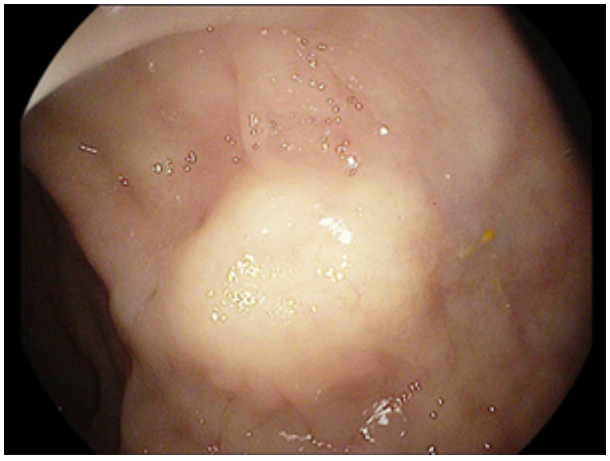
## What is your diagnosis?

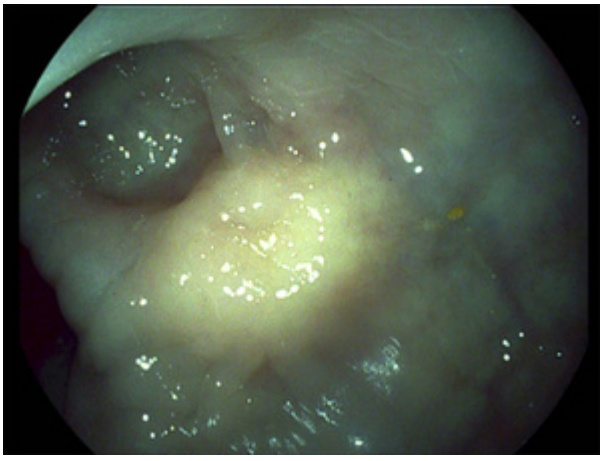


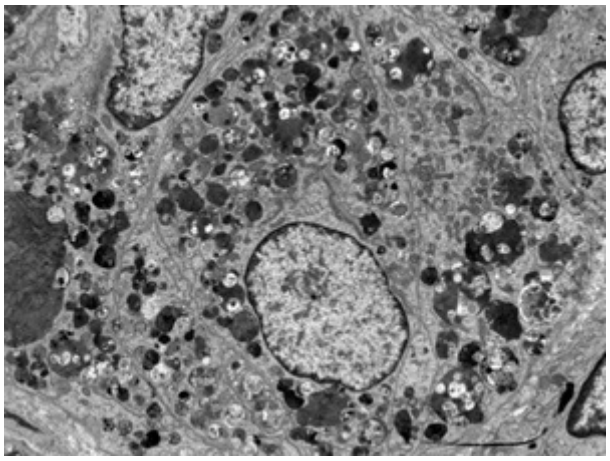


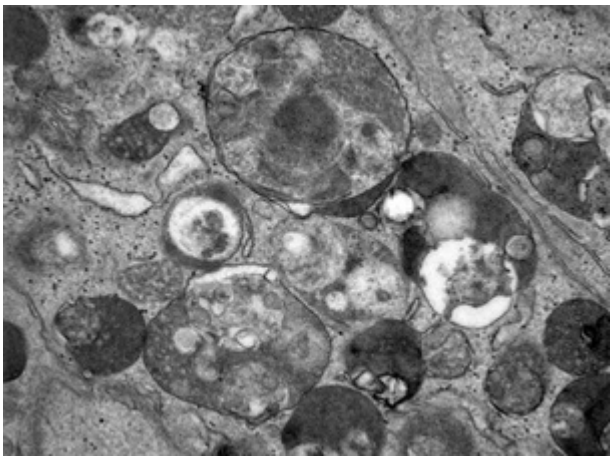












## Diagnosis

Multifocal granular cell tumour - involving stomach, caecum, rectum and probably oesophagus.

## Comment

A 64-year-old male patient with known alcoholism and asymptomatic liver cirrhosis presented for routine clinical check-up. The patient underwent upper gastrointestinal endoscopy which revealed numerous whitish oesophageal plaques and large varices which prevented the gastroenterologist from taking any biopsies. In the stomach, multiple submucosal lesions up to 2 cm in diameter were seen and biopsied (Panel A). Histology showed nests or sheets of round to polygonal bland-looking cells with granular eosinophilic cytoplasm (Panel B), which were PAS-positive (Panel C) and positive for S-100 protein (Panel D). A subsequent colonoscopy revealed two rectal (Panel E; Panel F: NBI) and three caecal yellow-white, firm, submucosal lesions up to 1.5 cm in diameter, which had the same histology. Electron microscopy was performed on a biopsy from one of the caecal tumours and showed clusters of Schwann cells with the cytoplasm packed with pleomorphic inclusions (Panel G) in membrane-bound lysosomes (Panel H).

Granular cell tumour (GCT) was first described by Abrikosoff in 1926 in the tongue and 1931 in the oesophagus. It is a rare usually benign tumour most often located on skin and in soft tissues. Eight percent of these tumours occur within the gastrointestinal tract most frequently in the oesophagus and colon. Thirty-six gastric GCTs were described until now (31 cases up to 2006 – Patti et al, and other 5 cases since then). Multiple GCTs of the stomach and other sites are very rare. There is a slight predominance in females but oesophageal location is more frequently seen in males. The age range of the patients is 30 to 60 years. The histogenesis of GCTs is not clear. The tumours may originate from Schwann cells as suggested by their positivity to S-100 protein. Some authors suggested the possibility of GCTs developing from a multipotent stem cell in the gastrointestinal tract because of their positivity to nestin.

Affected individuals may be asymptomatic or may present with nonspecific dyspepsia, peptic ulcer disease, dysphagia, gastric outlet obstruction, or (massive) upper gastrointestinal haemorrhage. Microscopically, GCTs show nests or sheets of round to polygonal or spindle cells with eosinophilic granular cytoplasm and centrally or eccentrically located nuclei. The nuclei are round to oval and show even chromatin and small nucleoli. Mitoses are rare and there is no necrosis. The tumours show no capsule and focal areas of infiltration may be present. In addition to their constant expression of S-100 protein, the granular cells are positive staining for vimentin, NSE, CD68, CD57, bcl-2, nestin and inhibin-alpha.

The malignancy rate in GCTs is below 2%. Less than 30 reported cases of malignant GCTs were reported in literature, only one of them located in the stomach. Features associated with malignancy according to Fanburg-Smith are local recurrence, rapid growth to a size larger than 4 cm, spindling of tumour cells, cytologic atypia, vesicular nuclei with large nucleoli, high mitotic activity, high nuclear to cytoplasmic ratio, p53 positive stain over 50% and Ki67 over 10% of tumour cells. The treatment of GCTs consists of endoscopical follow-up for small lesions, surgical resection (laparoscopic or conventional wedge resection) or endoscopic

excision for larger tumours (>1cm), symptomatic lesions, rapid growth, transmural infiltration, or suspicion of malignancy. New therapeutic options are laser, diathermy loop, endoscopic mucosal resection and endoscopic submucosal dissection.

## For further reading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## Presented by


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