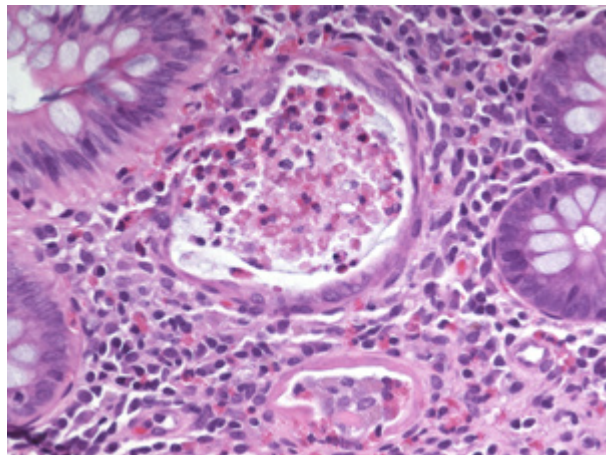
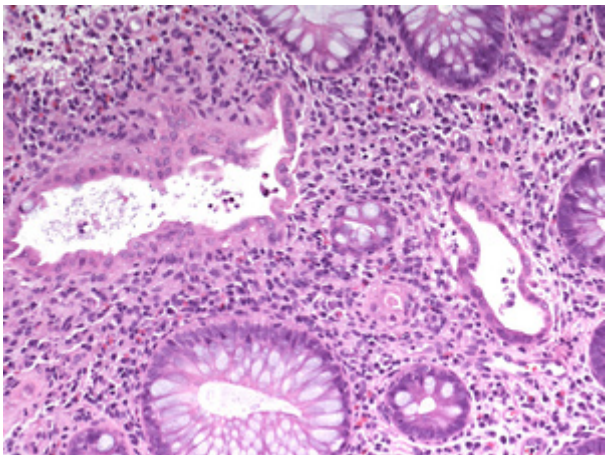
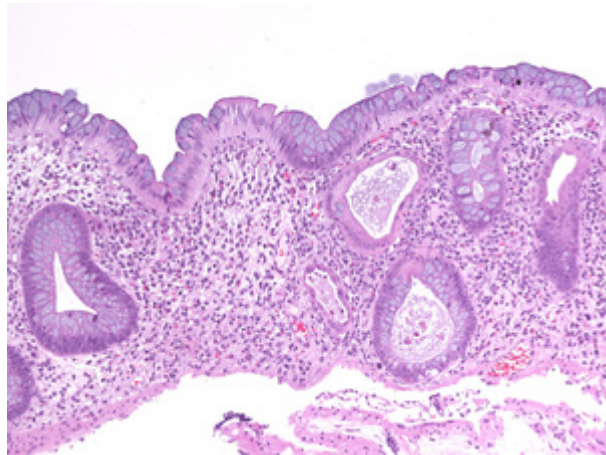
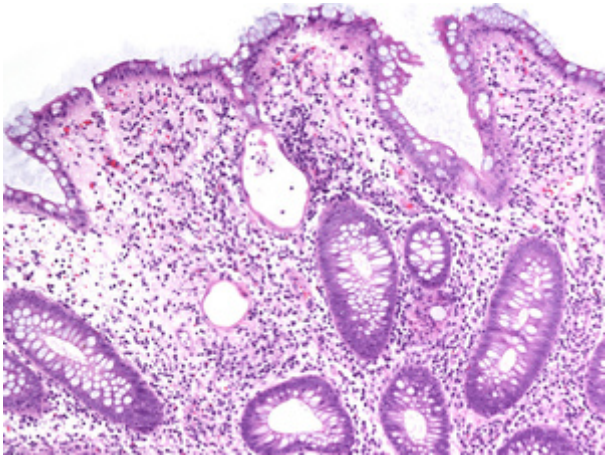
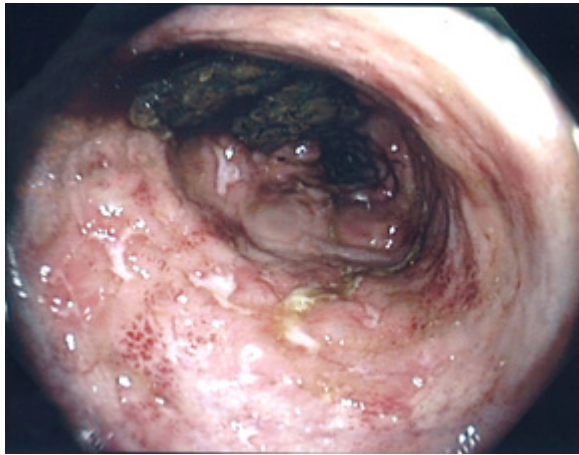
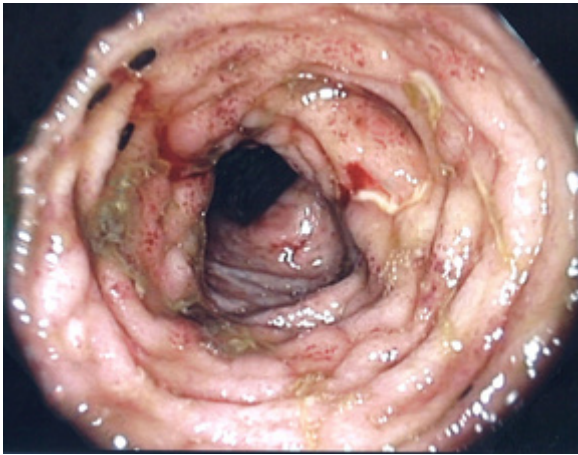
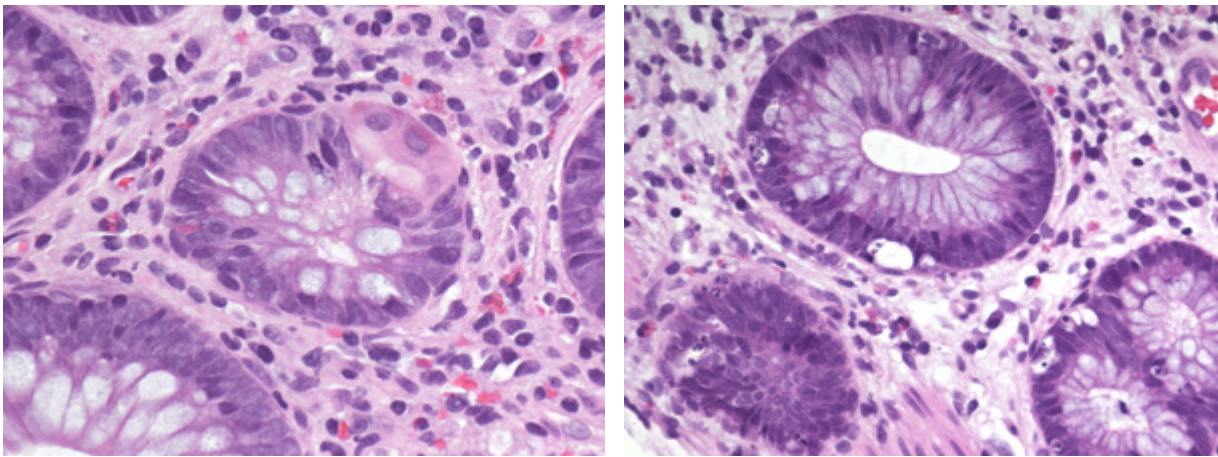


# March 2015

Colon biopsies from a 16-year-old male with rectal bleeding.

What is your diagnosis?





## Diagnosis:

Chemotherapy-induced colitis.

## Comment:

Endoscopy shows diffuse inflammation of the large bowel mucosa with marked oedema, haemorrhage and superficial erosions (Panels A-B). Histology reveals crypt architectural disarray with focal crypt loss and increased lamina propria inflammation. Between normal looking crypts dilated damaged crypts are seen. Their epithelial lining is flattened. Note the characteristic hyper eosinophil cytoplasm of the lining cells (Panel C-E). In the lumen of these crypts apoptotic debris, admixed with neutrophils, is present (Panel F). Early changes may not affect the entire crypt epithelium (Panel G) and may be solely characterized by increased crypt epithelial apoptosis (Panel H).

The morphological changes illustrated above qualify for a histological diagnosis of drug-induced colitis.

The patient suffers from stage III colon cancer (pT4a N1b V1) and is currently under adjuvant chemotherapy with Oxaliplatin/Capecitabine (XELOX). Considering this drug history, the mucosal damage was most likely caused by capecitabine, which is a prodrug that is enzymatically converted to 5-fluorouracil (5-FU).

By definition, chemotherapy-induced colitis is damage to the colon (or rectum) mucosa secondary to chemotherapy (synonyms mucositis, chemotherapy effect). It is of note that the small intestine is the most common site of chemotherapy-induced mucositis within the gastrointestinal, but biopsy material from this region is only rarely obtained. Knowledge of the drug history is the central key to diagnosis, which rests mainly on the presence of epithelial damage, apoptosis, and regenerative atypia without much inflammation.

The presence of substantially increased apoptotic bodies within intestinal crypts should always raise the possibility of drug effects once certain conditions such as graft versus host disease (GvHD) and immunosuppressive disorders, especially AIDS, have been ruled out. Hence, differential diagnosis mainly includes other types of drug injury, in particular colitis induced by mycophenolate mofetil (MMF) or other biological anti-cancer agents, such as ipilimumab.

## For further reading:

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