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# CT colonography to visualise the whole colon can be complementary to incomplete colonoscopy

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## CASE REPORT

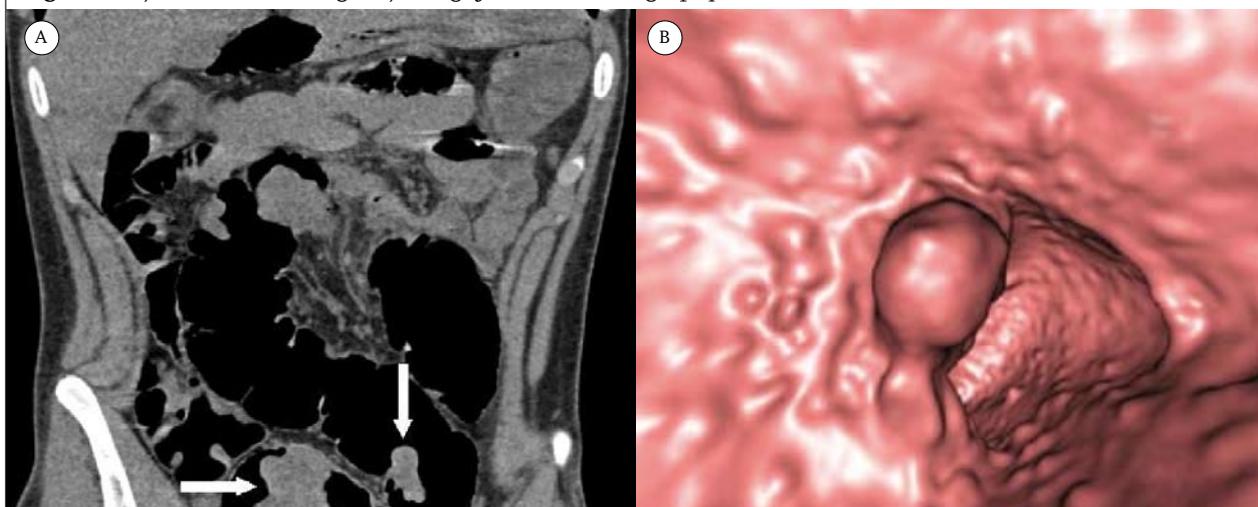
A 20-year-old man was referred to the outpatient clinic with anaemia. Two weeks before presentation he developed a vague pain in the lower abdomen. Bowel motions had always been three times a day, without diarrhoea or constipation. Once he observed rectal blood loss. However, his father told us this had been a daily matter for several weeks. There was no relationship between the abdominal pain and defecation, urination, food products, or physical activity. His appetite was normal, his weight was stable, and he had no fever or night sweats. Family history was negative for inflammatory bowel disease, polyps and malignancy in the gastrointestinal tract.

Physical examination revealed a pale young man with a blood pressure of 124/58 mmHg, a pulse rate of 68 beats/min, a length of 197 cm, and a weight of 81 kg (BMI 20.9 kg/m<sup>2</sup>). Examination of the abdomen showed normal bowel sounds, liver and spleen were not enlarged, there was no tenderness and no palpable mass. Rectal examination revealed clear blood. Blood tests showed a haemoglobin of 4.0 mmol/l, MCV 55 fl, leucocytes 5.2 x10<sup>9</sup>/l (normal differentiation), iron 1 µmol/l, iron binding capacity 66 µmol/l, iron saturation 1.7%, ESR 8 mm/h, creatinine 65 µmol/l, potassium 3.8 mmol/l, alkaline phosphatase 59 U/l, alanine aminotransferase 9 U/l, lactate dehydrogenase 288 U/l, and albumin 36 g/l. During a colonoscopy the ascending colon could not be visualised. An additional computed tomography (CT) colonography was performed. In *figure 1* an image of this CT colonography is presented.

## WHAT IS YOUR DIAGNOSIS?

See page 390, for the answer to this photo quiz.

Figure 1. A) Coronal CT image, B) Image from CT colonography



ANSWER TO PHOTO QUIZ (ON PAGE 389)

CT COLONOGRAPHY TO VISUALISE THE WHOLE COLON CAN BE COMPLEMENTARY TO  
INCOMPLETE COLONOSCOPY

During colonoscopy multiple large polyps were seen in the colon (*figure 2*). Histology showed multiple tubulovillous adenomas with high-grade dysplasia. Unfortunately, the ascending colon could not be visualised during colonoscopy. To visualise the complete colon a CT colonography was performed.<sup>1</sup> This is a technique for which bowel preparation is required, as for a barium enema. Colonic distention is achieved by means of air insufflation through a rectal tube. Nonenhanced supine and prone images were obtained at a multidetector CT scanner (Sensation 64, Siemens, Germany). The interpretation strategy includes two-dimensional and three-dimensional (fly-through) review. CT colonography showed polypoid lesions in varying diameters (*figure 1*).

The prevalence of polyps on colonoscopy in young individuals without a genetic predisposition has not been studied often. In a retrospective analysis de Jong *et al.* observed an incidence of colonic polyps of 4.1% in individuals between 20 and 30 years of age without a gene mutation.<sup>2</sup> Persons who have colonic adenomas are known to have an increased risk of developing colorectal cancer. For this reason surveillance colonoscopies should be performed every three to six years (depending on the number of adenomas). Sometimes it is not possible to visualise the complete colon. Recently the CT colonography has proven to be a good alternative diagnostic procedure as compared with a conventional colonoscopy.<sup>3</sup> However, colonoscopy has the advantage of being both diagnostic and therapeutic.

In our case, a large number of tubulovillous adenomas were found throughout the whole colon. For this reason the patient was referred to the surgical department for a total colectomy with ileo-anal pouch anastomosis. The most likely differential diagnosis is a spontaneous APC mutation on chromosome 5 or a biallelic MYH mutation on chromosome 1.<sup>4</sup> Genetic analysis will follow.

## DIAGNOSIS

Adenomatous polyposis coli.

## REFERENCES

1. Pickhardt PJ. Differential diagnosis of polypoid lesions seen at CT colonography (Virtual colonoscopy). *Radiographics* 2004;24:1535-59.
2. De Jong AE, Morreau H, Nagengast FM, et al. Prevalence of adenomas among young individuals at average risk for colorectal cancer. *Am J Gastroenterol* 2005;100:139-43.
3. Summers RM, Yao Y, Pickhardt PJ, et al. Computed tomographic virtual colonoscopy Computer-Aided Polyp detection in a Screening Population. *Gastroenterology* 2005;129:1832-44.
4. Galiatsatos P, Foulkes WD. Familial adenomatous polyposis *Am J Gastroenterol* 2006;101:385-98.

**Figure 2.** *The polyps as observed during colonoscopy*

