# Case 8
# Diagnosis of Rectal Tumor using SOMATOM Perspective

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## HISTORY

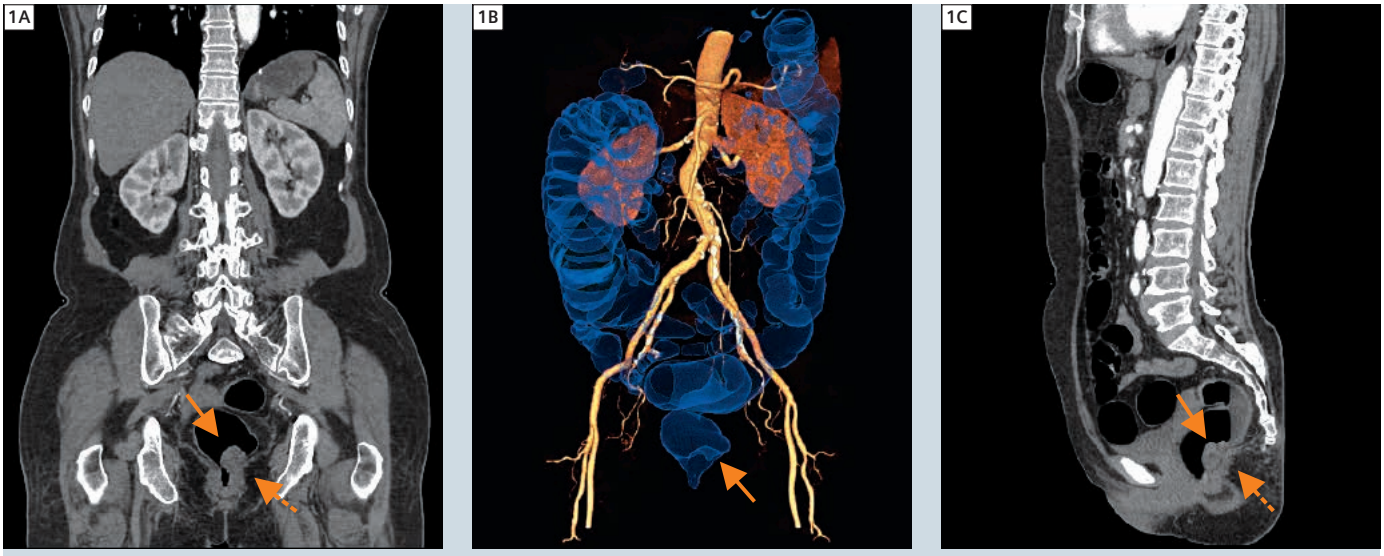
A 62-year-old female patient, with a known diagnosis of "rectal tumor", presented herself for further evaluation before treatment.

## DIAGNOSIS

CT images showed a cauliflower-like, broad-based soft tissue mass located on the left-posterior wall of the rectum (Figs. 1 to 3). It measured 25 x 22 mm and was causing luminal narrowing. There were no signs of wall thickening nor of infiltration of the peri-rectal fat. The enhancement of the mass was mild and homogeneous. A regular shaped, hypodense lesion (Fig. 4) was revealed in the left hepatic lobe, measuring 13 x 10 mm in size and with 15 HU CT value. After intravenous contrast injection, no enhancement was present suggesting a cyst. Neither enlarged lymph nodes nor ascites were found. All other abdominal and pelvic organs appeared to be normal. A rectalscopic examination resulted in a benign rectal tumor. The patient was scheduled for a rectoscopical tumor resection.

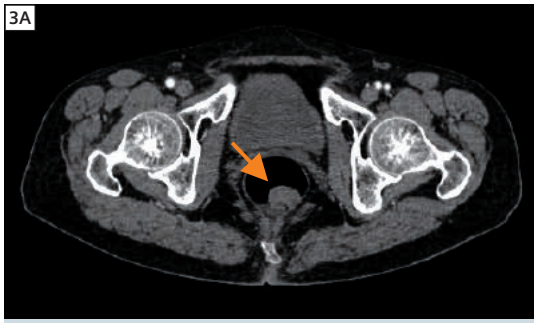
## COMMENTS

Although rectoscopy is accurate in the detection of rectal tumors, it does not allow the evaluation of extra-rectal diseases. CT is valuable in the preoperative assessment and staging in assumed cases of cancer. Rapid advances in CT technology have improved the accuracy and usefulness of computer imaging. In our department, we experience the great advancement from 6-slice to 128-slice in the daily routine examinations. It allows a longer scan range within a shorter scan time and with a slice width as thin as 0.6 mm. The fast scanning speed also reduces motion artifacts. Furthermore, the newly developed *syngo*.via workstation allows efficient reading and decreases the post-processing workload.

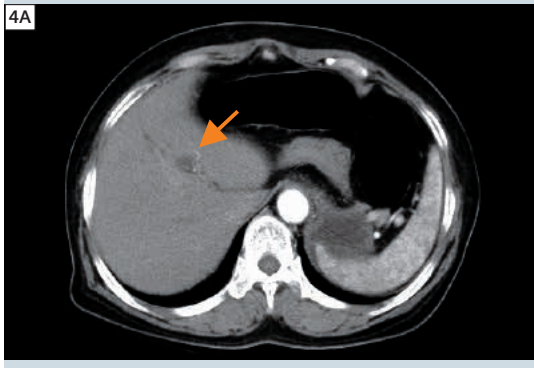


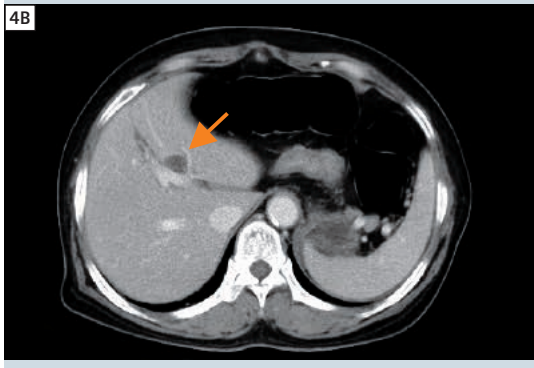

**1** Coronal (Fig. 1A) and sagittal (Fig. 1C) MPR and VRT (Fig, 1B) images show the rectal tumor that caused luminal narrowing (arrows). The peri-rectal fat tissues are not infiltrated (dashed arrows).


2 *syngo*.via helps to speed up reading and facilitates creation of findings.



3 Axial images of arterial (Fig. 3A) and venous (Fig. 3B) phases present mild and homogenous enhancement of the tumor (arrows).





4 Axial images of arterial (Fig. 4A) and venous (Fig. 4B) phases reveal the non-enhanced hepatic lesion (arrows).

## EXAMINATION PROTOCOL

| Scanner | *SOMATOM Perspective* | | |
|---|---|---|---|
| ***Scan area*** | *Abdomen / pelvis* | ***Rotation time*** | *0.6 s* |
| ***Scan mode*** | *Arterial / venous phase* | ***Pitch*** | *0.6* |
| ***Scan length*** | *518 mm* | ***Slice collimation*** | *64 x 0.6 mm* |
| ***Scan direction*** | *Cranio-caudal* | ***Slice width*** | *1 / 7 mm* |
| ***Scan time*** | *13 s* | ***Reconstruction increment*** | *0.7 / 7 mm* |
| ***Tube voltage*** | *110 / 130 kV* | ***Reconstruction kernel*** | *B30s* |
| ***Tube current*** | *86 / 74 mAs* | ***Contrast*** | *Iopromide 370* |
| ***Dose modulation*** | *CARE Dose4D* | ***Volume*** | *80 mL* |
| ***$CTDI_{vol}$*** | *6.36 / 8.15 mGy* | ***Flow rate*** | *3 mL/s* |
| ***DLP*** | *374.27 / 491.44 mGy cm* | ***Start delay*** | *Bolus tracking* |
| ***Effective dose*** | *5.6 / 7.4 mSv* | | |