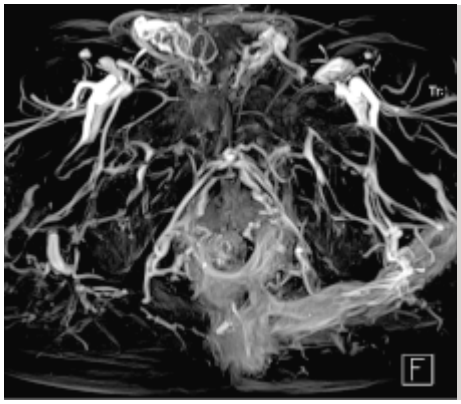
also the reactive lymph nodes inside the mesorectum (Fig. 1A). On the axial contrast-enhanced 3D FLASH sequence after image subtraction a rectal fistula is clearly delimitable, forming a supralevatoric horseshoe (Fig. 2A). The internal opening is located at 9 o'clock lithotomy position. The fistula passes the levator muscle at 4 o'clock (Fig. 2B) towards the fat of the left-sided ischiorectal fossa. The fistula retains pus and is directly connected to the residual gluteal abscess (Figs. 2C, D). MIP-reconstruction of the data derived from the 3D FLASH sequence is giving a survey of the whole extent of inflammation (Fig. 3).

Discussion

To detect and precisely assess the extent of anorectal fistulas subtraction, MR-fistulography is extremely helpful. Contrast-agent based, gradient-echo imaging provide excellent anatomic resolution and the capability to perform image reconstructions on the one hand as well as thin-sections and high sensitivity for inflammation on the other hand.



[Figure 3] *3D FLASH, Maximum Intensity Projection (MIP) reconstruction.*

Case Report MAGNETOM Avanto
Recurrent Rectal Cancer Evaluation with VIBE and SPACE

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Patient history

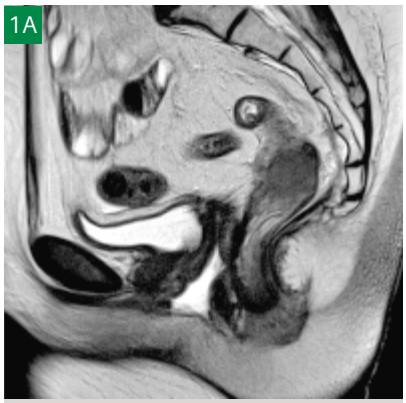
48-year-old woman with cancer of the lower rectum received transanal endoscopic microsurgery (TEM) in 2003. In that year a recto-vaginal fistula was also closed. Currently, the patient presented with perianal pain and recurrent rectal cancer was diagnosed. Pelvic MRI was performed to determine the extent of the recurrent tumor.

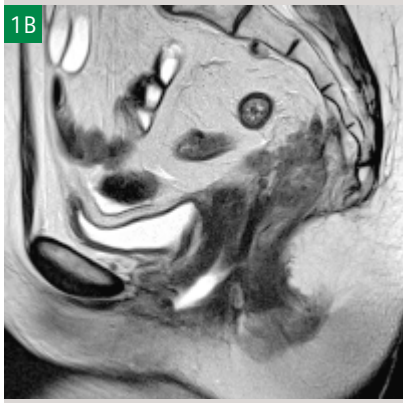
Image findings

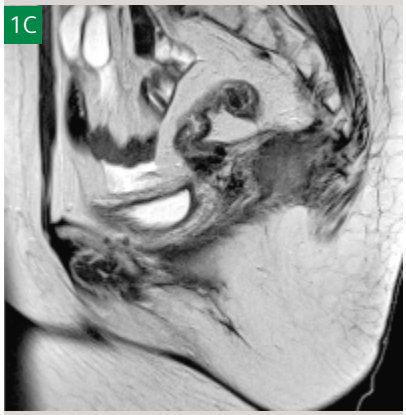
A sagittal T2-TSE sequence demonstrates the recurrent rectal cancer located above the anal canal infiltrating the right-sided levator muscle (Figs. 1A, B, C). Additionally, fluid is accumulated in the vaginal lumen after rectal water filling indicating ano-vaginal fistula. On the axial T2 SPACE sequence (Figs. 2A, B, C) and the corresponding axial contrast-enhanced VIBE sequence (Figs. 3A, B, C) the tumor is infiltrating the mesorectal fat, the mosrectal fascia and the parietal peritoneal fascia along a scar formation on the right side with small amounts of ascites indicative for peritoneal spread (Fig. 2A). Infiltration of the right levator muscle is seen (Figs. 2, 3). There are no lymph nodes present.

Discussion

Pelvic anatomy can be imaged exquisitely with the 3D, high-resolution T2 SPACE sequence as well as with the high-resolution contrast-enhanced T1 VIBE sequence. A combination of both appears to be useful particularly for local staging of rectal cancer.

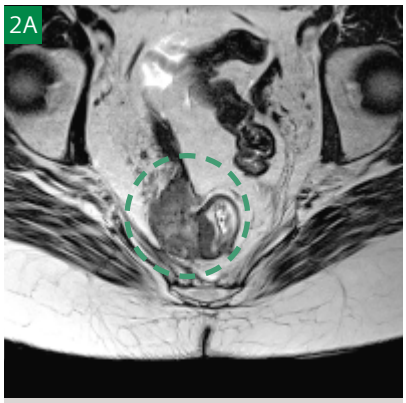


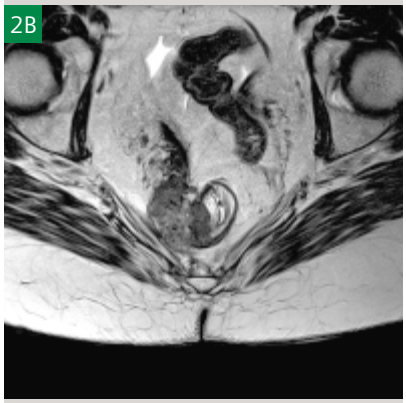


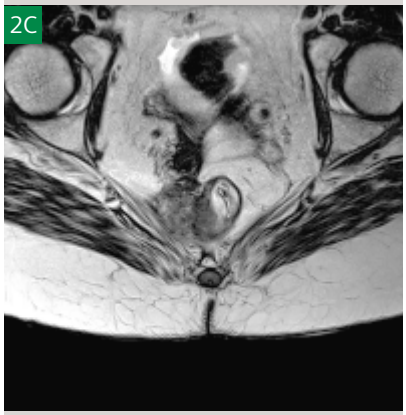


[Figure 1] *Sagittal T2-weighted Turbo Spin Echo –TSE.*

TR	*4960 ms*
TE	*126 ms*
slice thickness	*6 mm*
matrix	*512 x 256*
FoV	*280 mm*
flip angle	*150°*
BW	*195 Hz/Px.*

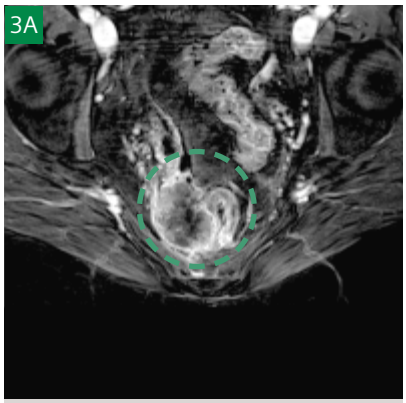


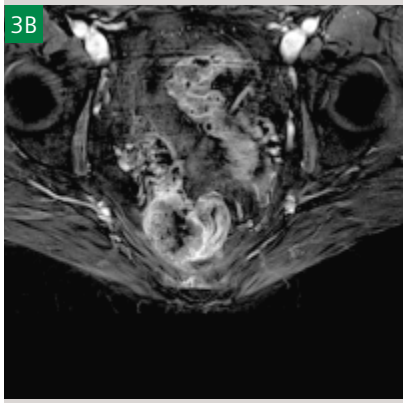


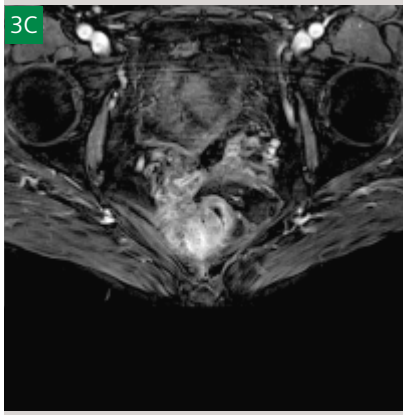


[Figure 2] *Axial T2 SPACE (Sampling Perfection with Application optimized Contrasts using different flip angle Evolutions).*

TR	*1500 ms*
TE	*166 ms*
slice thickness	*2 mm*
matrix	*512 x 256*
FoV	*250 mm*
flip angle	*150°*
BW	*444 Hz/Px.*
iPAT	*PAT 2, GRAPPA.Hz/Px.*







[Figure 3] *Axial Volume Interpolated Breathhold Examination – VIBE.*

TR	*8.30 ms*
TE	*3.23 ms*
slice thickness	*2.5 mm*
matrix	*512 x 256*
FoV	*250 mm*
flip angle	*125°*
BW	*150 Hz/Px.*