

Case Report

Radiological Evaluation of Post-Concurrent Chemoradiotherapy Carcinoma Cervix with Radiation Induced Rectovaginal Fistula: A Case Report

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ABSTRACT:

Introduction: Concurrent chemoradiotherapy is the standard treatment for locally advanced carcinoma cervix. Post-radiation changes and late complications may mimic disease recurrence, making imaging evaluation crucial. **Case report:** A treated case of carcinoma cervix post-concurrent chemoradiotherapy underwent contrast-enhanced MRI pelvis for follow-up evaluation. **Discussion:** Imaging showed no residual or recurrent cervical tumor. Post-radiation fibrosis with cervical stenosis causing endometrial cavity collection and a radiation-induced rectovaginal fistula were identified, without any enhancing mass to suggest recurrence. **Conclusion:** This case highlights the importance of imaging in differentiating post-treatment radiation-induced complications from recurrent carcinoma cervix.

Keywords: Concurrent chemoradiotherapy, carcinoma cervix, radiation

INTRODUCTION:

Carcinoma of the cervix remains one of the most common gynecological malignancies worldwide. Concurrent chemoradiotherapy with external beam radiotherapy and brachytherapy is the standard of care for locally advanced disease. Post-treatment imaging is crucial for assessing treatment response, detecting residual or recurrent disease, and identifying radiation-related complications. Late radiation-induced changes such as fibrosis, stenosis, and fistula formation may significantly impact patient quality of life and may pose diagnostic challenges by mimicking recurrent malignancy. Accurate interpretation of imaging findings is therefore essential.

Case Report:

A known case of carcinoma cervix, treated with concurrent chemoradiotherapy, presented for post-

treatment imaging evaluation. Contrast-enhanced MRI of the pelvis was performed as part of routine follow-up. Imaging demonstrated no abnormal enhancing soft tissue lesion involving the cervix. The cervical region showed post-treatment fibrotic changes without diffusion restriction or abnormal contrast enhancement, findings suggestive of no definite residual or recurrent tumor. An endometrial cavity collection was noted, likely secondary to cervical stenosis in the post-radiation setting. Additionally, there was evidence of a fistulous tract with cavity formation between the posterior vaginal wall and the anterior rectal wall, associated with mild mural thickening of the vaginal and rectal walls. No enhancing mass lesion was seen along the fistulous tract or adjacent pelvic structures, favoring a radiation-induced rectovaginal fistula rather than tumor recurrence. No significant pelvic lymphadenopathy or distant metastatic disease was identified.

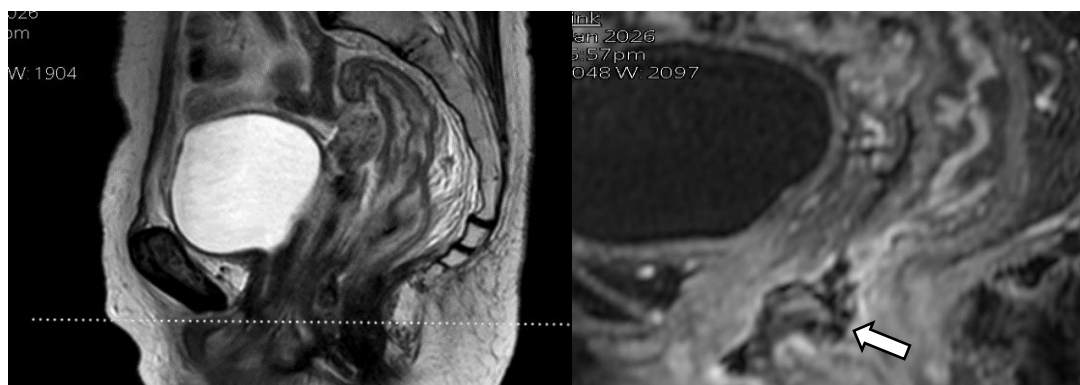
IMAGE I

Image I : Sagittal T2-weighted and post-contrast fat-suppressed images:

Sagittal T2-weighted and post-contrast fat-suppressed images demonstrate a communicating tract between the posterior vaginal wall and anterior rectal wall (White arrow), consistent with a rectovaginal fistula, with associated wall thickening and surrounding inflammatory changes.

IMAGE II

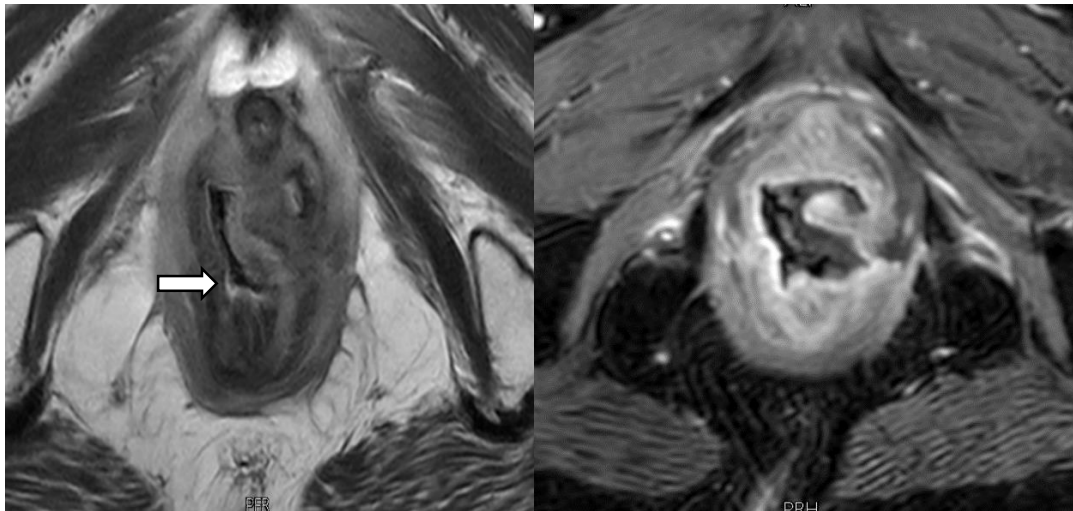


Image II: Axial T2-weighted and post-contrast fat-suppressed images:

Axial T2-weighted and post-contrast fat-suppressed images show a direct communication between the rectum and vagina with cavity formation (white arrow), confirming rectovaginal fistula.

IMAGE III

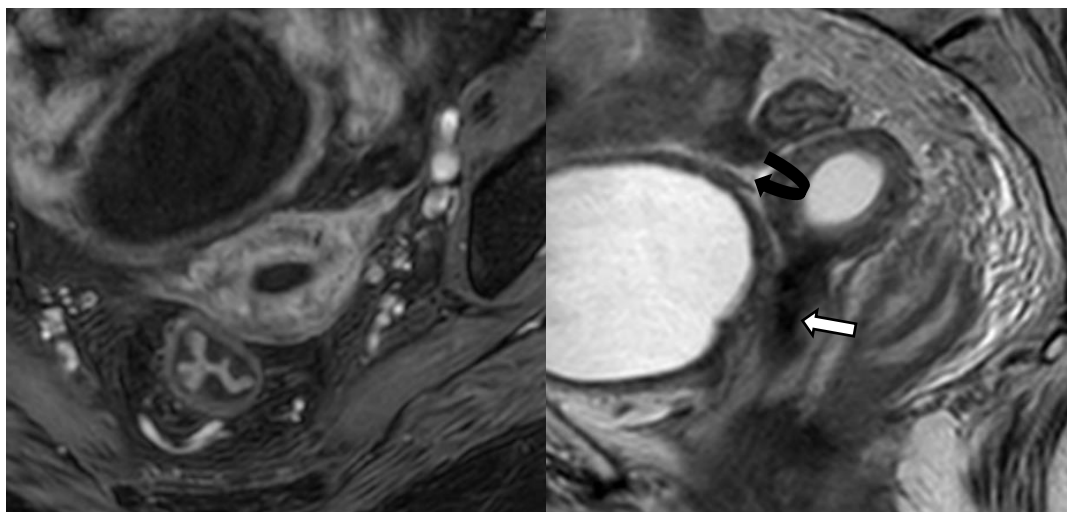


IMAGE III: Sagittal T2-weighted and post-contrast fat-suppressed images:

Sagittal T2-weighted image shows cervical stenosis with endometrial cavity fluid collection (curved black arrow). The cervix appears T2 hypointense, consistent with post-radiation fibrotic changes (white arrow). Post-contrast fat-suppressed image shows no abnormal enhancement.

DISCUSSION:

Concurrent chemoradiotherapy achieves high local control rates in carcinoma cervix, and imaging plays a pivotal role in post-treatment assessment. The absence of abnormal enhancement or diffusion restriction in the cervix is a reliable indicator of complete treatment response and helps exclude residual or recurrent disease [1,2].

Radiation-induced fibrosis is a well-recognized late complication of pelvic radiotherapy and can lead to cervical stenosis. Obstruction at the cervical canal may result in endometrial cavity fluid collection, which

should not be misinterpreted as pyometra or disease recurrence. Careful evaluation of enhancement patterns and diffusion characteristics is essential to avoid diagnostic errors [2,3].

Rectovaginal fistula is an uncommon but serious late complication of pelvic radiotherapy. It occurs due to radiation-induced ischemia, tissue necrosis, and chronic inflammation. The risk is increased in patients receiving combined chemoradiotherapy and brachytherapy. Imaging plays a critical role in identifying the fistulous tract, assessing associated cavity formation, and

excluding recurrent tumor, which would significantly alter management [4,5].

MRI and contrast-enhanced CT are particularly useful in differentiating radiation-induced inflammatory or fibrotic changes from recurrent malignancy. The absence of an enhancing soft tissue mass along the fistulous tract or at the primary tumor site strongly favors a benign post-treatment etiology [1,6].

This case highlights the importance of recognizing post-radiation complications and underscores the role of imaging in guiding appropriate patient management, preventing unnecessary interventions, and improving long-term outcomes.

CONCLUSION:

This case demonstrates a complete radiological response following concurrent chemoradiotherapy for carcinoma cervix, with no evidence of residual or recurrent disease. It also illustrates significant radiation-induced complications, including cervical stenosis with endometrial cavity collection and rectovaginal fistula formation. Awareness of these post-treatment imaging findings is essential for accurate diagnosis and optimal patient care.

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