



A Rare Presentation of Urothelial Carcinoma: Metastasis to Cervical and Uterine Tissues

Haran Nilesh N. MD *¹, Juvekar Shashikant L. MD²

1. Consultant, Department of Radiology, National Cancer Institute, Nagpur, Maharashtra.
2. Head of Department (HOD), Department of Radiology, National Cancer Institute, Nagpur, Maharashtra.

***Correspondence to:** Haran Nilesh N. MD, Consultant, Department of Radiology, National Cancer Institute, Nagpur, Maharashtra.

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Abstract

Urothelial carcinoma (also called transitional cell carcinoma) is cancer that begins in the urothelial cells, lining the urethra, bladder, ureters, renal pelvis, and some other organs. Almost all bladder cancers are urothelial carcinomas. Urothelial carcinoma (UC) rarely metastasizes to the gynaecologic tract, occurring in descending order of frequency, within the vagina, uterus, ovaries, and cervix.

There is significant morphologic overlap exists between primary gynaecologic squamous lesions (both benign and malignant) and metastatic UC, thus potentially hindering a timely and accurate diagnosis.

However, magnetic resonance imaging (MRI) helped immensely as the morphological characteristics of the main neoplastic mass, and metastasis in the pelvic nodes, cervix and uterus were almost similar on all the sequences thus guiding us for a dedicated biopsy from the cervix lesion which thus confirmed the lesions.

Key words: *Urothelial carcinoma (UC), Gynaecologic squamous lesions, magnetic resonance imaging (MRI), Metastasis.*

Introduction

Urothelial carcinoma also known as transitional cell carcinoma is the most common primary neoplasm of the urinary bladder [1].

Transitional cell carcinoma is typically a tumor of older patients with age of 60. There is a strong male predilection with male: female 4:1 [1].

Hematuria is the most common presenting complaint, which may be macroscopic or microscopic. A tumor located at the vesicoureteric junction may result in ureteral obstruction and hydronephrosis.

Lymph nodes, bones, lung, and peritoneum are the most common sites of metastasis from bladder cancer [2]. So the metastasis of the tumor to uterus and cervix at the same time is a rare phenomenon and is to be discussed.

Case Report

A 65-year-old female with complaints of bleeding during urination since 2 months underwent cystoscopy and biopsy and was diagnosed as high grade urothelial carcinoma of urinary bladder with focal squamous differentiation.

The patient underwent MRI pelvis for initial evaluation (12/2023) at our institute which showed ill-defined altered signal intensity heterogeneously enhancing polypoidal lesions involving the posterolateral wall of urinary bladder on right side (Figure 1 & 2) largest measuring 2 x 1.6 x 1.7 cm in size (AP x TR x CC). Few enlarged metastatic nodes involving the right external iliac region (Figure 3) largest measuring 2.2 x 2 cm in size. The uterus and cervix showed no obvious lesion seen (Figure 4). The patient was started on neoadjuvant chemotherapy (Gemcitabine with Carboplatin).

Post 4 cycles of neoadjuvant chemotherapy patient underwent response assessment MRI (05/2024) which on comparison with previous MRI pelvis revealed significant interval increase in the size of lesions of urinary bladder (Figure 5 & 6), interval increase in the size of metastatic nodes in the right external iliac region (Figure 7) and new onset few well defined altered signal intensity (morphologically similar to the neoplastic mass) lesions involving the myometrium of the uterus (Figure 7) and cervix (Figure 8) largest measuring 4.2 x 3.7 x 4.2 cm involving the cervix.

The patient underwent biopsy from the cervix lesion, which on histopathology report (HPR) was squamous cell carcinoma in a known case of high grade urothelial carcinoma with extensive squamous differentiation and on Immunohistochemistry (IHC), tumor cells are immunoreactive to GATA-3 and P-40 while negative for P-16 and vimentin, confirmed urothelial carcinoma with extensive squamous differentiation.

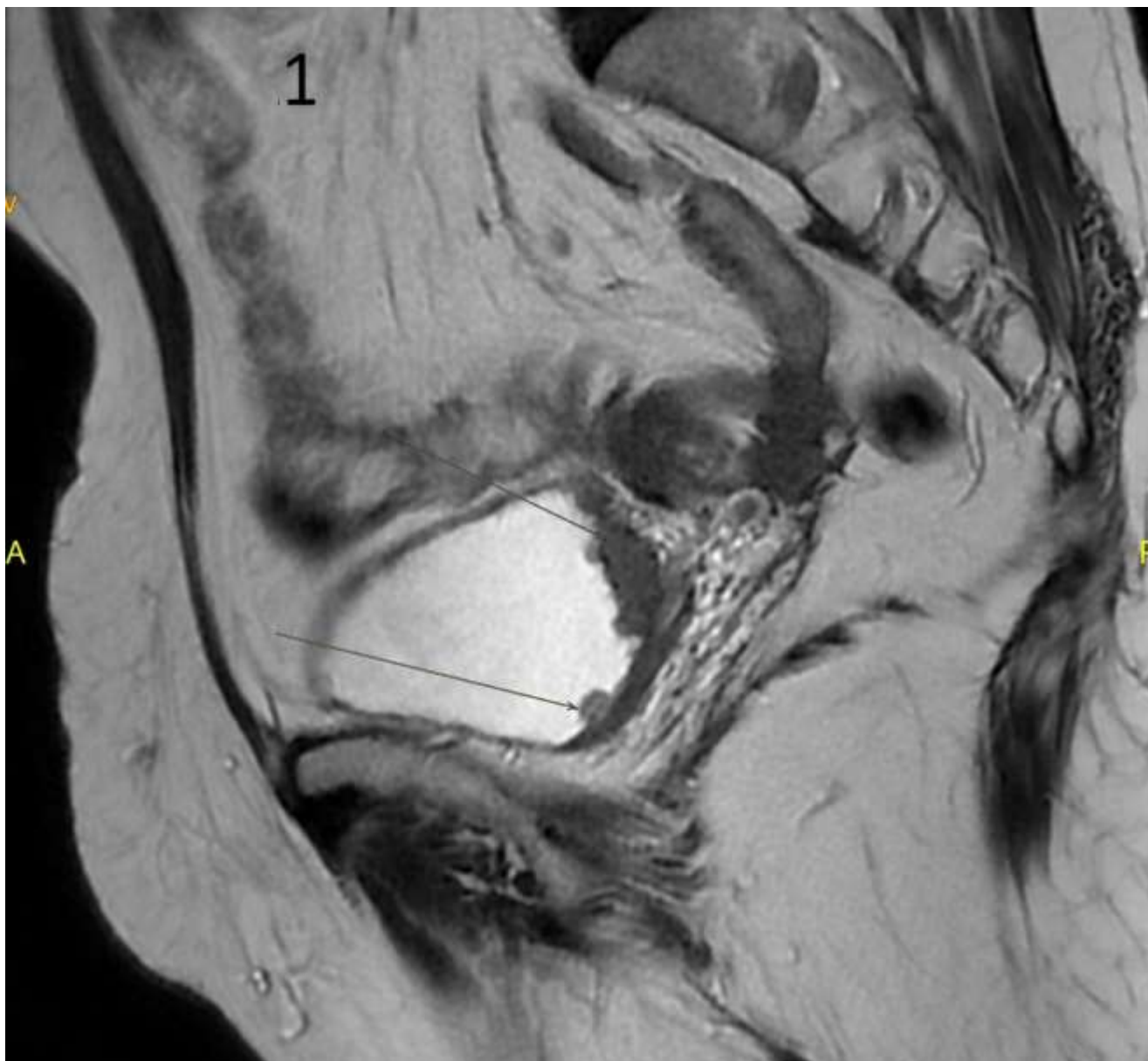


Figure 01

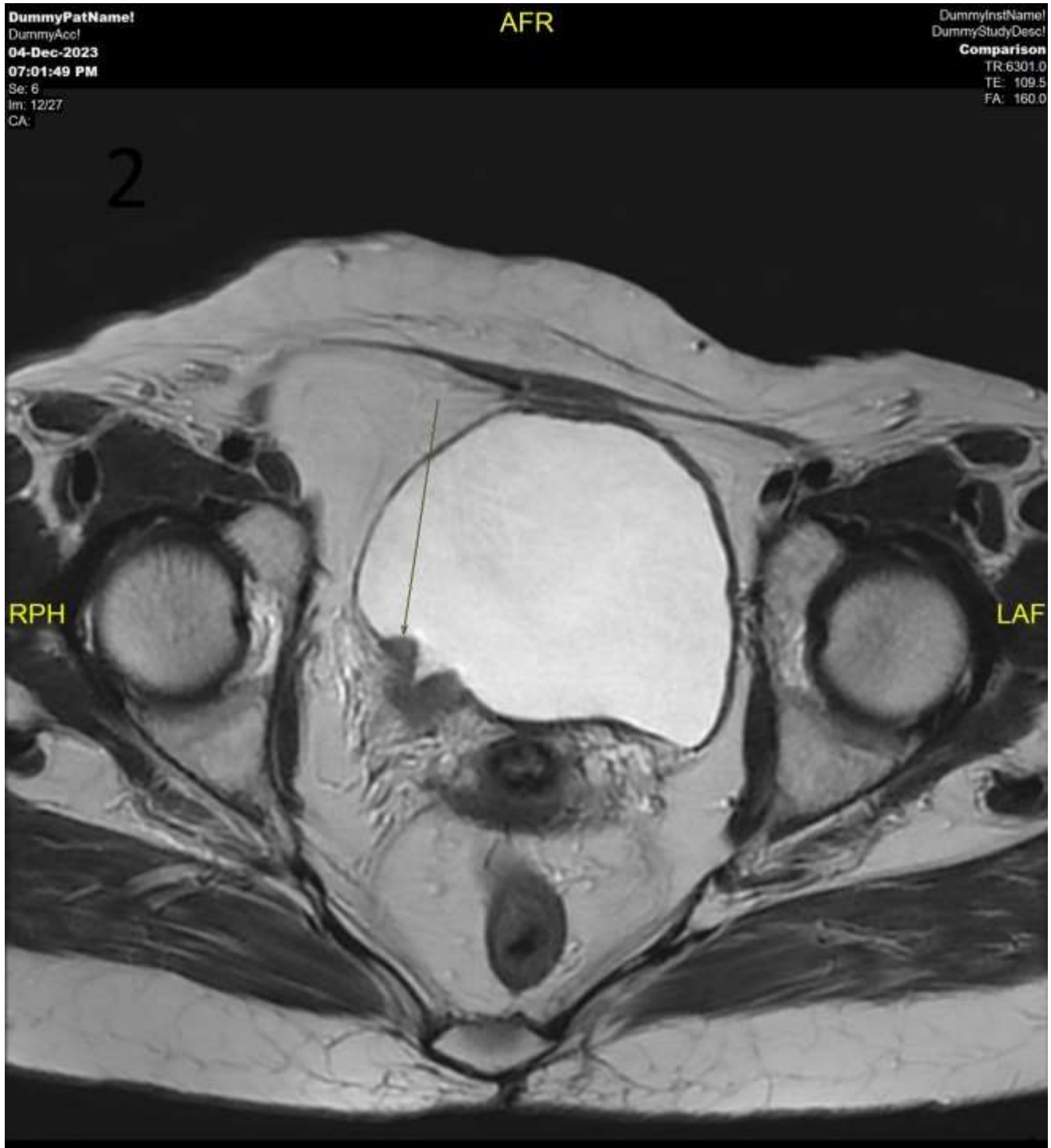


Figure 02

Figure 1 & 2: MRI pelvis dated 12/2023 (for initial evaluation) in sagittal and axial view T2 sequence shows ill-defined T2 intermediate intensity polypoidal lesions involving the posterolateral wall of urinary bladder on right side.



Figure 3: MRI pelvis dated 12/2023 (for initial evaluation) in axial view T2 sequence shows enlarged metastatic node seen in the right external iliac region.



Figure 4: MRI pelvis dated 12/2023 (for initial evaluation) in sagittal view T2 sequence shows normal uterus and cervix with no obvious altered signal intensity lesion seen.



Figure 05

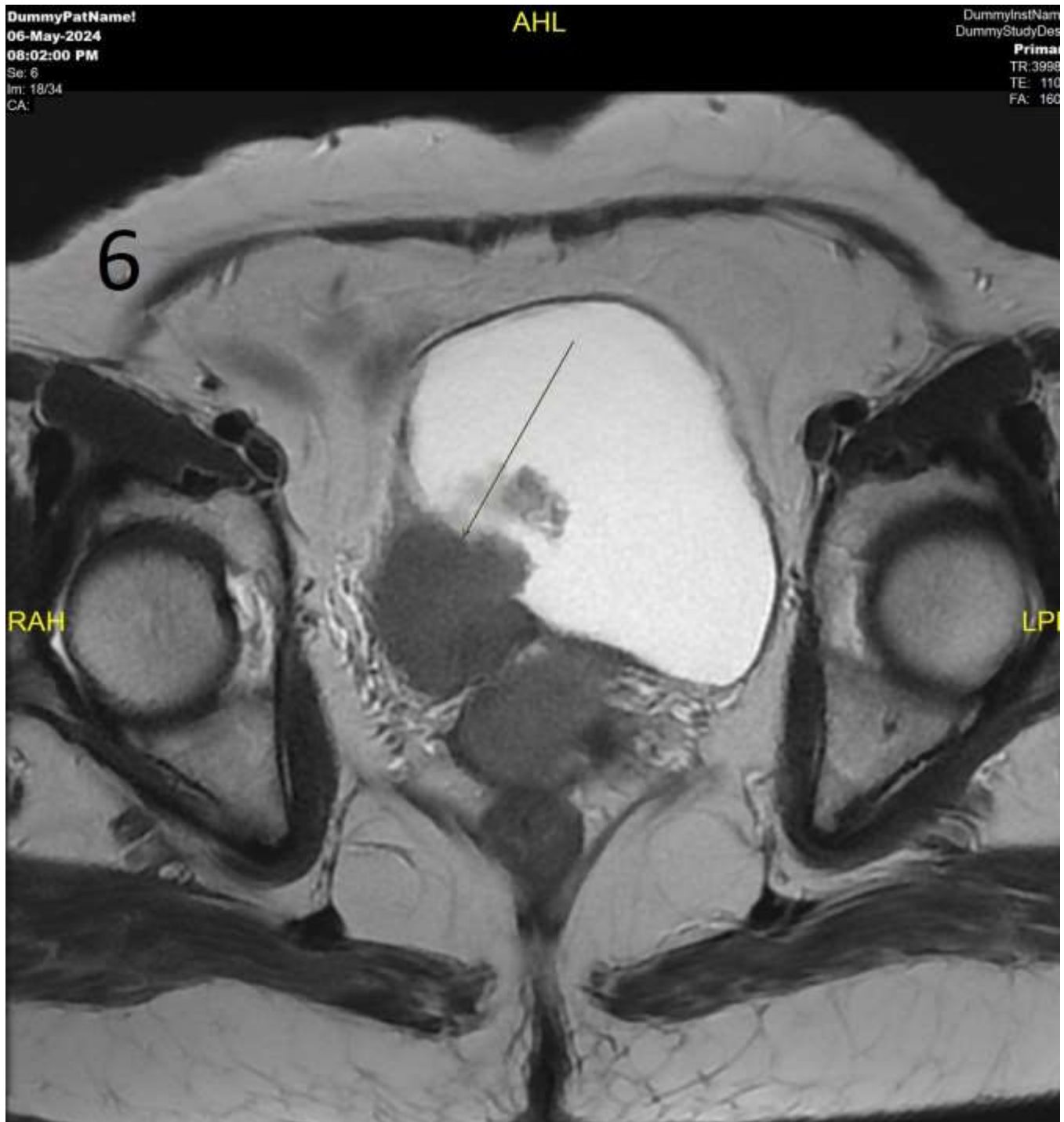


Figure 06

Figure 5 & 6: MRI pelvis dated 05/2024 (for response evaluation) in sagittal and axial view T2 sequence shows significant interval increase in the size of lesions seen involving the right posterolateral wall of urinary bladder.

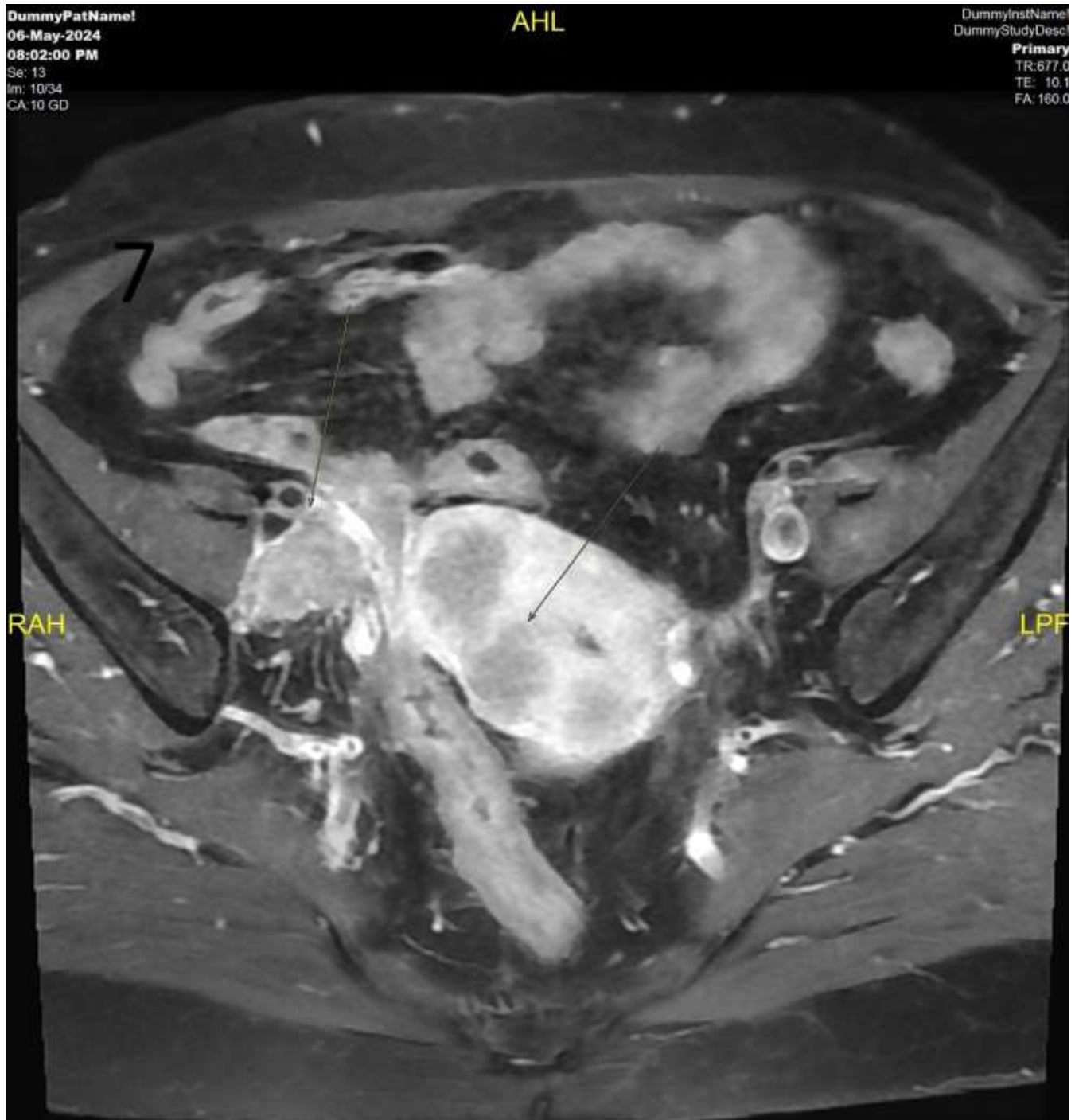


Figure 7: MRI pelvis dated 05/2024 (for response evaluation) in axial view post contrast T1 sequence shows interval increase in the size of heterogeneously enhancing metastatic node seen in the right external iliac region and new onset few well defined altered signal intensity heterogeneously enhancing lesions involving the myometrium of the uterus.



Figure 8: MRI pelvis dated 05/2024 (for response evaluation) in axial view post contrast T1 sequence shows similar intensity lesions involving the cervix and urinary bladder.

Discussion

Urothelial carcinoma metastasis in the gynecological tract is a very rare phenomenon. Metastasis to sites like lymph nodes, bones, lungs, liver and peritoneum are more commonly seen [2].

The morphological appearances of the neoplastic lesion and metastasis on MRI were grossly similar on all the sequences which helped to arrive at a conclusion that the lesions in the uterus and cervix are most likely metastasis from the primary lesion [3, 4]. The treating clinician was then directed to perform biopsy from the accessible gynecological lesion, hence proved the diagnosis on HPR and IHC [5].

This diagnosis helped the clinician to direct the patient for palliative chemotherapy which was initially planned for curative intent by giving neoadjuvant chemotherapy followed by surgery.

Conclusion

Urothelial carcinoma is the most common tumor of the urinary bladder, however the metastasis to uterus and cervix simultaneously is a very rare phenomenon [6], having this background knowledge of the characteristic imaging findings and its pattern of involvement, the lesions in the uterus and cervix should not be ignored as benign etiology [7] (as these are far more common than metastasis) and direct the clinician for clinical examination and biopsy as and when required as these lesions don't cause any bleeding symptoms in patient and incidentally identified in response assessment follow up scans, but drastically change the management from curative to palliative intent [8].

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